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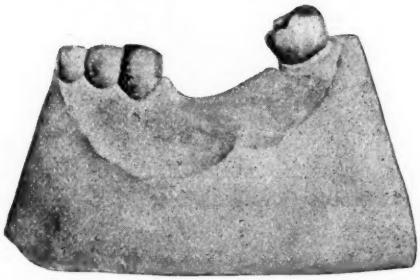
Original Contributions.

THE PRACTICAL BRIDGE OF TO-DAY, AND THE NEXT STEP TO IMPROVE IT.

By F. F. Fletcher, D.D.S., St. Louis. Read before the Missouri State Dental Association, at Pertle Springs, July 6-9, 1897.

In the few remarks I am about to make on the broad subject of bridge-work, it is not my intention to give even a synopsis of the various kinds of bridges so well known to you all, but to confine myself to those replacing the posterior teeth exclusively, and to the inferior maxilla especially.

In replacing the anterior teeth we agree that in nearly all cases porcelain teeth are the only proper substitutes for the lost organs. By their use we can copy nature so closely that our work is not

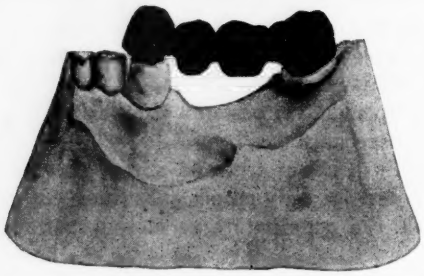


observed, except on close examination by critics. The beauty, contour and usefulness of the lost parts are restored so perfectly that our work passes unnoticed—one of the highest compliments that can be bestowed upon our labor. Our methods are so similar that this branch of the work may be safely laid aside at this time.

Passing to the posterior teeth, however, we are confronted with different problems. The teeth to be used as abutments are nearly always in an abnormal position, more especially the inferior molars. In place of our piers being parallel, they stand at different angles.

Bell-crowned teeth must be dressed down so as to have bands fit even approximately. V-shaped spaces are to be filled, angles and pockets for the lodgment of food are to be obliterated, etc. In fact, many conditions confront us that are absent in constructing an anterior bridge. We must have strength and cleanliness in both, but in restoring the posterior teeth utility and cleanliness must supplant beauty and art. Consequently we can use different materials.

Here might be termed a typical case for the so-called successful bridge of to-day, which I will describe. Teeth are left in this position, dressed down and crowns made for them, which we will as-



sume fit perfectly when the bite is taken and before the several parts are united into a bridge; but when the attempt is made to place the finished case on the abutments prepared to receive it trouble begins. If the operator had not made it himself he would be ready to declare that the mechanical man had put in an extra tooth, but he knows everything has been done properly and it must fit, so, after he has ground corners, pushed, jammed, malleted, stretched the bands and perspired, he finally forces it into place. The case is next set in cement; the mutilated and stretched cervical edges of crowns are battered in against the tooth with foot-plugger and mallet; the case articulated and considered finished. The operator steps back and admires the result of his genius and mechanical ability. In a few days even the patient, if he recovers, declares the work to be so firm and useful that he is satisfied to have undergone the ordeal.

Now for the prognosis. By battering the cervical ends of crowns in against the abutments the instrument has indented, roughened and fluted the gold. The position precludes even the possibility of

again restoring the contour and polishing. The crimped and uneven surface soon causes gingivitis. The malleting probably interfered with crystallization of cement, which soon begins to wash out, leaving pockets for the reception of particles of food, mucous and micro-organisms, thereby inviting pericementitis, caries, pyorrhea, alveolaris, pulpitis, and final destruction of entire case, from piers to superstructure.

I make but two criticisms on this class of work. First, the piers are not parallel, and *all bridges are ill-fitting in proportion as the piers diverge from the parallel;* second, *the dummies cover too much tissue*, in time causing irritation. These evils can and should be corrected.

In regard to the first, how shall we parallel the piers? There is probably not an operator present who would attempt to fill an approximal cavity without first securing space to properly restore

the original contour. The same conditions exist here, only in a more exaggerated form, and the same principles should therefore apply. Call orthodontia to your aid, correct the position of these malposed teeth. Straighten them up until the piers are parallel, thus eliminating the V-shaped space, securing better occlusion, and placing the abutments in position to receive the finished bridge without injury either to teeth or bands. The bridge then fits as was intended. The piers being parallel, there is no excuse for a misfitting case. Furthermore, the bridge acts as a permanent retaining appliance, holding the former malposed teeth in their proper positions. Do not attempt to parallel the piers by grinding. It is a very deceptive practice, and in nearly all cases the band leaves the tooth on the mesio-proximal surface in proportion to the distance it is forced down. Regulate the teeth, and the construction of a neat-fitting bridge is made easy.

We will next take up the second criticism, that the dummies cover too much tissue and cause irritation. This defect is more easily overcome. The saddle should be made as narrow as possible. For, arguing from cause to effect, we find in this connection irritation and inflammation to be the result of uncleanliness caused by lodgment and decomposition of particles of food held against the tissues by the saddle. Therefore, as the most approved methods direct us to rest the saddle firmly on the ridge, we should so construct it as to cover the minimum amount of tissue. Make the case entirely of metal, making dummies with full-size grinding surface and the narrowest possible saddle, resting squarely on the top of ridge. The dummy slopes gracefully from the grinding surface to point of contact with ridge, but buccally and lingually; its construction is simple. With pin vise and wire secure shape and size of

grinding-surface of tooth to be made from the model. With another pin vise and wire secure shape and size you wish to make the saddle. Cut and straighten wires and you have length of band at both grinding-surface and ridge. Cut band by the measurements and it presents this form. Solder band and flatten cervical end till shape of saddle is secured. File to fit ridge perfectly. Then burnish pure gold or platinum, thirty-two gauge, to ridge and solder to band. Construct cusps and secure articulation in the usual manner. Solder, and the dummy is complete. Carve model just enough to secure snug adaptation to ridge. Wax in place, invest and solder.

You have now constructed a bridge with parallel piers and a narrow saddle. This seems to be an ideal bridge, containing the combined good properties of strength, beauty, perfect occlusion, cleanliness, and it fits everywhere as was intended, eliminating the objectionable features of malposed teeth, V-shaped space, porcelain or combination of gold and porcelain, angles, pockets, wide saddle

and ruined bands. This bridge will keep as clean as the adjoining natural teeth, which is the best you can do in any mouth, and will cause no irritation around piers, because they stand parallel, and there is no excuse for crowns not fitting. But little tissue is covered by the saddle, which is practically self-cleansing and causes no irritation.

Bridgework to-day is not an infant, but a sturdy youth, just passing through the awkward age, and he who in the future would lead him on to perfect manhood, must cast away the present fallacies of attempting to fit abutments standing at different angles, and constructing dummies on principles incompatible with the laws of hygiene. He must train his pupil on scientific lines, and when the finished scholar appears before us, in the shape of an ideal piece of bridgework, we will behold it divested of unclean saddle and diverging piers, designed on correct architectural lines, constructed on the principles of science and hygiene, and finished with all the beauty, art and symmetry that the then thoroughly educated dentist can call to his aid. In my opinion, the ideal product will contain a narrow saddle, which is hygienically correct, and parallel piers, as the only form permitting of perfect adaptation and occlusion.

PRESIDENT'S ADDRESS.

By D. F. Orr, D.D.S., Liberty, Mo. Delivered to the Missouri State Dental Association, at Pertle Springs, July 6-9, 1897.

Members of the Missouri State Dental Association, Gentlemen: I most heartily congratulate all who are in attendance at this annual meeting. I do this not alone because of the pleasure created by fraternal union and the sympathy elicited by social contact, but for the further and higher reason, that the purpose of our association is the promotion of science, and by that the lessening of human suffering. Science is truly the handmaid of humanity and every step that she makes relieves an ache or removes a pain.

It can not be doubted that these meetings are of the highest value to our profession, inasmuch as they condense into the written and oral expression of a few hours the infinite experiences and matured reflections thereon of hundreds of men, who during the previous year have found truth along the pathway of pain and suffering.

I most heartily congratulate you on the passage by the general assembly of our state last winter of the act in relation to dentistry,

in lieu of the meager provisions concerning it which were to be found in the Revised Statutes of Missouri for the year 1889. The new act is a great step in advance for our profession. This can be realized only by a minute comparison of the two acts. The new one justly places dentistry on the same plane with the highest scientific professions.

The profession of dentistry no longer consists of scattered individuals, unknown to the law as a distinct calling, of doubtful merit in the eyes of medical men of the world, not always discriminated by the masses of the people from the itinerant tooth-pullers, whose art began with the bullet-moulds and ended with the forceps, but of trained, educated, scientific men, men of large views, culture and experience, who are recognized by the state as constituting a profession of great beneficence, and who are entitled to the regard of the law-maker and the confidence and respect of the citizen.

The act unifies the members of our profession in the state, gives them an energetic organism, and places them in a position where they can not only purge dentistry of unworthy professors, but are able also to secure the honors and rewards of our calling due to men of merit and true scientific attainments.

It provides for a state board of dental examiners, with ample power to guard the avenues of admission in the interest of the people and the profession against those not sufficiently equipped with the necessary scientific learning for the proper and humane practice of our profession.

And, beyond all, it fixes a standard of morals and scientific attainment for those seeking admission to our profession, which will insure in our state a body of dental practitioners fully equal to the demands of the world now on all liberal and useful professions.

In fact, I do not see aught more that is needed in the law. It gives an opportunity for which we have waited for many years, and now, in the true spirit of progressive science, let us use it nobly.

The act provides for the appointment by the governor of five members of our profession, each of at least five years experience in dentistry, as a "State Board of Dental Examiners for the State of Missouri." Upon this board, through its by-laws and regulations, devolves the faithful execution of the provisions of the act. Its functions are delicate and weighty, but such as really should be courted by all those members of our honorable calling who look

beyond mere self and are willing to give a part of their time and abilities for the good of all of our fellow-citizens.

In this address I have deemed it wiser to direct attention to the great act now on our statute books regulating the whole question of dentistry in our state, rather than to attempt any resume of the progress made during the past year. The act furnishes ample text for abundant discussion and eulogy. The enlarged intelligence and critical acumen of the essayists for this meeting, and of those who shall indulge in discussion, will make abundant amends for any omission on my part in the direction indicated. Moreover, a resume is almost always of necessity, for brevity's sake, a dry detail of facts, probably known to all intelligent dentists, and the facts thus stated are sure to be lacking in that expansion which gives clearness and that pungent criticism and epigrammatic expression which enliven style.

FUSIBLE ALLOYS.

By John G. Harper, D.D.S., St. Louis, Mo. Read before the Missouri State Dental Association, at Pertle Springs, July 6-9, 1897.

It will be observed that all the following alloys will melt in boiling water:

	Tin.	Lead.	Bismuth.	Cadmium.	C.	F.
Newton's	3	2	5	0	100°	212°
Rose's	3	8	8	0	95°	203°
Erman's	1	1	2	0	93°	199°
Wood's	2	4	7	1	70°	158°
Mellott's	5	3	8	0	93°	200°
Harper's	4	4	7	1	80°	180°

Erman's alloy can conveniently be made of equal parts of plumbers' half-and-half solder (as it is composed of equal parts of tin and lead) and bismuth.

Harper's alloy can be made of eight parts of half-and-half plumbers' solder, seven parts bismuth and one of cadmium, and can be poured into a modeling composition impression. This alloy is hard enough to withstand the hammering required and makes a smooth sharp die. Dentists who have no special system can get female dies by the following method: Take a plaster model of a suitable tooth, saw off the crown surface, dress the flat surface smooth on a coarse file, lay on a flat surface, place a rubber ring over the model to hold model in position and to keep it in place

when metal is poured, place the point of an old excavator on model, soon as metal is poured remove the instrument; when the metal is cool turn the model downward and tap the metal until the model drops out, thus saving the model, as the first pour might not give a perfect cast. To make a cast from an artificial tooth, place softened modeling compound in a rubber ring and imbed the tooth, leaving required amount of articulating surface exposed, cool the compound, trim nicely and shave the compound far enough below the upper surface of ring to give space for the cast, or place another rubber ring on the one containing the compound; then the model is ready for the pour.

To use this metal for dies on which to swedge plates, it is necessary to use modeling compound as a counter-die. To make a modeling compound counter proceed as follows: Soften the compound and place in lower part of a vulcanite flask, lay rubber-dam over the compound and press the die into the compound; when cool remove the die and you have the counter. When swedging use the dam between the plate and counter. To drive plate into small depressions in die, between the teeth for instance, lay a bar of lead on the plate and drive to place with hammer. This metal will not make a sharp enough die for a plate when cast in a modeling compound, as the large amount of metal softens the impression, but for small dies it cools quickly and gives a sharp die, therefore cast in a plaster of paris impression. To obviate taking more than one impression of the mouth, use the die to make an impression in compound and in the impression pour the metal; this die will do for the first swedging and you can use the die made in the plaster impression for the final swedge.

DISCUSSION ON CATAPHORESIS.

AT THE REGULAR MEETING OF ALUMNI ASSOCIATION OF THE NEW YORK COLLEGE OF DENTISTRY, MAY 8, 1897.

Dr. Swift: Some question has been raised as to whether Cataphoresis is the best term we can apply to the electrical diffusion of medicaments through the tissues. Looking at the practical side of the question I would speak first of the devices by which the current is controlled. Before going further, however, let me describe the construction of the device which I had built according to my own ideas: The cylinder is made of non-conducting fiber, ten inches long and

two inches in diameter, wound with fine german-silver wire. The cylinder is revolved by means of fine gearing, either to the right or left, by the hand-wheel, and there is a sliding contact which works on a worm-thread so adjusted that the cylinder makes one revolution before the sliding contact moves to the next strand of wires. Revolving the hand-wheel once causes cylinder to revolve five times, and five complete revolutions of cylinder would deliver to the patient one-half volt, or by two turns of the hand-wheel, which would cause ten revolutions of the cylinder, one volt would be delivered.

When obtunding sensitive dentin in a case which is very sensitive to the current, I spend if necessary five minutes or more in delivering one volt, but the increase being constantly at the rate of at least 1-600 of a volt no pain is caused, and yet there has been an unbroken and continual increase of current, which I believe diffuses the medicament much more rapidly and less painfully than when the current is delivered in jumps of not less than ⅛ volt, and where the tooth is very sensitive being obliged to stop several seconds at times until the pain subsides.

In obtunding sensitive dentin I sometimes use a twenty per cent solution of cocain, and often simply moisten a small piece of cotton and pick up a few crystals with it—about a fifty per cent solution.

Cataphoresis is used very successfully in extirpating living pulps, and it can be accomplished without causing the slightest pain. Many who use cataphoresis, in writing or speaking on the subject seem to consider that obtunding sensitive dentin, extirpating live pulps, and bleaching teeth are the most important uses to which it can be successfully applied; and, it seems to me, lose sight of the many other important uses to which it should be adapted. Obtunding of sensitive dentin is by no means the most important use I make of cataphoresis. In bleaching teeth I cannot say I get any better results by using the twenty-five per cent solution of pyrozone cataphorically, than by the old method of using the same solution with hot air. I find it takes about the same amount of time and the final result is no better. I find the use of cataphoresis very successful in the treatment of chronic abscess. Often these cases of chronic abscess with fistulæ are due to a small portion of necrosed bone. In these cases I wrap a piece of cotton saturated with a twenty per cent solution of cocain upon a small platinum electrode, carry it down into the fistulæ, and spend about three minutes with a voltage averaging from

fifteen to twenty, and completely obtund the surrounding part; then with a bur remove the necrosed bone and if necessary the apex of the root, and after thoroughly cleansing the part place a small wire-like piece of zinc in my positive electrode carrier, and passing it through the fistulæ deposit a nascent chlorid of zinc directly where desired, as suggested by Dr. Morton. Many such cases which have resisted other treatment have thus been successfully dealt with.

In allaying peridental inflammation or apical pericementitis I use a single cup electrode, filling it two-thirds full of cotton by winding it about the platinum in the bottom of the cup; then saturating this with a solution of Churchill's Saturate Tincture of Iodin, diluted one-half with equal quantities of alcohol and water, applied directly to the gum tissue at the point of inflammation, beginning generally with ten volts, increase rapidly, using from seventeen to twenty-one or two volts, according to the ohmic resistance of the patient, and maintaining the contact from five to eight minutes.

This line of treatment has been wonderfully successful, and to illustrate that it is applicable to many cases of inflammation before suppuration has occurred, let me cite one or two instances. One case, which came under my care about three years ago, was a first upper right molar with a blind abcess, face very much swollen and the eye almost closed. On opening into the tooth good drainage was obtained, and after subsequent treatment the roots were finally filled with fibers of cotton and oxychlorid of zinc and the crown with amalgam. It gave no trouble whatever until over two years had passed, when the patient returned to me with considerable swelling and inflammation in that same region, the tooth sore to articulation and to touch, not a severe pain but sufficient to make sleep impossible. Instead of opening into the root I simply made a cataphoric application of dilute tincture of iodin as before described, using according to my record of the case as a maximum twenty-two volts with a contact of eight minutes. The application was made on the day before last election day. Nothing more was heard from the case until some time later when the patient's husband informed me that the swelling had gone down the next day and there had been no further trouble. I have since seen the tooth and it is apparently in perfect condition.

During my absence last summer my assistant had under treatment a left superior second bicuspid with a blind abscess, which was quite

troublesome even after continued treatment; whenever a tight dressing and stopping were inserted there was a disturbance. Eventually it quieted down, and the day before my return the roots were filled and a temporary filling placed in the crown cavity. The next day the patient returned to see me, complaining of pain. The tooth was somewhat elongated and very tender to pressure, the face being slightly swollen. Concluding that the trouble was due to apical pericementitis, I made an application of dilute tincture of iodin cataphorically, as before described. The inflammation entirely subsided, and when I saw this tooth not long ago it seemed to be perfectly normal.

Cataphoresis may be very successfully used in the treatment of facial neuralgia. Numbers of cases have come under my care where the family physician had failed to effect any lasting cure and as usual the dentist was called upon as a last resort.

When a careful examination of the teeth fails to disclose any solution as to the cause of the trouble, I have given relief by applying dilute tincture of aconite, using the single cup electrode, positive, and placing the negative pole sometimes on the chin at the mental foramen, or just below the medulla and elsewhere, tracing with the positive electrode any nerves which appeared tender to the pressure, whether in the mucous membrane or at the supraorbital or infraorbital region, the voltage used varying from six to twenty-two volts as the case might seem to require, and the application consuming some considerable time. I have also used dilute alcohol with the addition of menthol crystals, as well as other remedies.

I had one patient who had suffered with neuralgia for five or six years and who had been under constant treatment. One of these treatments described I found afforded relief for about one week, then the pain would return. I could give no reason from the condition of the teeth as to its cause, and decided that continued application might have some lasting effect. For some time I treated this case every day, then every other day, then twice a week, then once a week, and then with increasing intervals, until finally this case which had suffered for years with ever-recurring neuralgia has now been quiet for months.

In the treatment of pyorrhea alveolaris, where I am anxious to have my drugs penetrate deeply, I use a thin platinum wire electrode where the pockets are large, upon which I wind a small piece

of cotton saturated with whatever drug I may wish to use, taking care not to come in contact with the roots of live teeth, as I use a comparatively high voltage in these cases. The results thus obtained in these particular cases have been much more satisfactory than any other method of treatment heretofore employed.

I use cataphoresis also in applying cocain when setting crowns and bridgework, using the double-cup electrode which is commonly used for extraction, applying both cups upon the gum tissue about the tooth to be crowned, and using a twenty per cent solution with a contact of from two to three minutes.

The advisability of using street current or batteries has been a mooted question. Many claim that the former is preferable; others would not use it, and give numerous reasons why, naming as one the likelihood of some serious accident to the patient, or at least the possibility of an unpleasant shock, owing to some sudden change in the voltage at the central station or the crossing of wires, and last of all the elements, such as a severe thunderstorm. While acknowledging the truth of these assertions, there is still another important reason which it is well to consider. If you go into one of the central stations in any large city, and if you happen to have "a friend at court," so that you may be shown around thoroughly, you will see a recording voltmeter, the office of which is to record the voltage on the lines as they pass out of the station. If the voltage remained constant, as it should, the pencil of this instrument would record a smooth line, instead of which it traces a wavy line, showing that the voltage is anything but constant, due of course to the varying demands upon the station. Some claim that these slight variations have no effect upon cataphoric medication, but I consider that they retard the direct passage of the drug from the electrode through the tubuli, causing frequent painful shocks to the patient.

There has been some question of late as to the death of pulps after using cataphoresis, and many have attributed this to the use of cocain. I can see no reason why the small amount of cocain used in obtunding sensitive dentin should cause death of the pulp, but firmly believe that sudden and severe shocks would occasion it. When the pulp sustains a shock, occasioned by sudden increase of voltage, and if there is a retraction of the pulp, the question arises, how many such shocks and retractions will the pulp stand without causing aftertrouble? Should there be retrac-

tion the pulp must be drawn further away from the tubuli, and thus at least retard the transmission of the medicament.

Dr. Frank Van Blarcom: I agree with Dr. Swift that the most satisfactory method is to start the current at an exceeding low voltage and gradually increase it to the desired point. I cannot use more than ten volts without severe pain to the patient.

Dr. Sailer: How much voltage is ordinarily used?

Dr. Swift: I cannot accurately answer that question, as the resistance of teeth varies so much. In some cases with seven volts I get as good results as with twenty-two in the same length of time.

Dr. Chitterling: In one case I anesthetized a cervical cavity, very sensitive, in four minutes, using as strong a solution of cocain and electrozone as I could make. I make my solution as follows: Put some cocain in a minim glass and drop electrozone on it to dissolve, and then saturate cotton with the solution. I watch cotton to see that it is moist, putting a drop on now and then to keep it so.

Dr. Sailer: Everything which tends to alleviate suffering should be thoroughly advocated, but I think cataphoresis has been pushed too far. If it has any action on the pulp it interferes with the nervous system of the tooth, and so it acts on the circulation; the circulation must necessarily, therefore, be choked and stagnated for a certain length of time. We know what causes congestion, and when the circulation starts up later, with the increased force that is necessarily behind it, there is a likelihood of congestion. If more blood gets into the pulp of the tooth than can possibly get out of the apex of the root, if the pulp once becomes congested, the blood will never get out of the apex again in its normal state.

Dr. Mitchell: Dr. Luckey once remarked, that where cataphoresis was used there is much danger of drilling too deep, and so inserting our fillings too close to pulp, which will bring on after trouble.

Dr. Swift: Many cases have come to my notice where the pulps were abnormally high or low and where any measurements would have been unreliable. It therefore behooves us to be very cautious where thorough anesthesia of the parts has been secured, or we may easily encroach upon the pulp. So far as I know I have never lost a pulp nor found any pulpitis after cataphoric applications, except inflammation in deep or in cervical margin cavities, where a metal filling in close proximity to the pulp acted as an excellent conductor of heat and cold.

Dr. Forsheim: I have found in some cases, where the tooth is very sensitive, that when I press inside and outside the gum above the root the patient feels no pain.

Dr. Gottschaldt: My conclusions in regard to cataphoresis and other so-called obtunders are that the influence is largely on the patient's mind. A literary man, one of the most nervous persons I ever met, came to me for service. I told him I would fill a tooth for him at once and would not hurt him. I applied the dam, put a drop of carbolic acid into the cavity, a very small and simple one, as I always select an easy cavity for a first operation on a nervous person, and after waiting a few moments I excavated with an inverted cone bur and prepared that cavity before the patient was aware of it. After filling twenty-three cavities for him, in about as many sittings, he still maintained that the medicine had prevented the pain. I could give many such instances, but this one will make my first statement clear. My method is: Use sharp, clean instruments, be kind and gentle, let there be no undue exhibition of paraphernalia, know what you are going to do and do it. If we consume the greater part of our time in obtaining effects, what will there be left for work?

Dr. Swift: If we were all so conservative as to discard cataphoresis simply because it occupies a little extra time, we should not always please our patients, who, if willing to pay for extra time in order to save pain, should have such treatment. I also firmly believe that positive results are constantly obtained where it would be unfair to say that the cause was purely mental.

CHILDREN'S TEETH.

By O. S. Kerr, D.D.S., Independence, Mo. Read before the Missouri State Dental Association, at Pertle Springs, July 6-9, 1897.

The intention of this paper is not to teach members of the dental profession things they do not know, but rather to call to their minds what they have already learned and to urge the practice of same.

The study of children's teeth is, in my opinion, a very important factor in dental practice and has so seemed to me since I was two and a half years old, for to the best of my knowledge I had toothache from that time until all of my deciduous teeth were removed, which was not until I was thirteen years old.

We as dentists should first inform ourselves what can best be done, and the next step, and a very important one, is to educate patient

and parents as to what can be done and the necessity for such attention. We well know that in normal dentition the deciduous teeth will have erupted at the age of two and a half years, and some of them should remain in until the twelfth year; and yet some of the deciduous teeth often begin to decay before all have erupted. Caries in most cases is a token of the oncoming odontalgia, and I believe it to be the cause of many systemic disorders in children. Toothache alone is enough to give rise to family disturbances, especially if one of us dentists be the victim; and even if the caries should not give rise to toothache, but the teeth be prematurely lost, certainly their functions would be lost also. The first of these functions is mastication, next retention of the proper contour of the dental arch, and third beauty. I need not say anything about the importance of mastication, as you all know the old law: "Food well chewed is half digested, while food half chewed goes unmolested." Secondly, in retaining position, as it has to do with the alignment of permanent teeth, I think there is no truer type of selfishness than that illustrated by human teeth. They will attempt to take all the space given them from any cause, and if possible keep it. If deciduous teeth be prematurely lost, the first teeth that come in will have a tendency to lean in the direction of the least resistance, thus closing the space which should be occupied by the permanent teeth, and so the arch is contracted too small for the teeth and some of them must be pushed out of alignment, resulting in irregular and crowded dentition in many cases. As to the appearance of the deciduous teeth, it is quite necessary to retain them as long as possible, for if they are kept in place until the near approach of the teeth that shall take their places, the child does not have that toothless appearance which was once so readily associated with old age. If perchance a tooth should be left in too long and so crowd another out of alignment, the space is there, and by a simple operation, namely, extraction of a tooth, the permanent one will come in place. If it does not we have only one tooth to move in order to correct the deformity, while if the arch should have contracted from premature loss we should have to move several teeth to expand the arch, and then perhaps be compelled to use mechanical means to bring the permanent tooth into position.

An ideal filling material is one which has all good qualities and no bad ones. I have never been able to find such a one, but I think

tity of any medicine which has much power as an irritant. The first thing is to stop the toothache without hurting the patient, as it is very necessary to make a good impression at the first sitting. And above all in the management of a child do not allow the mother, father, nurse or anyone to stand by the chair and sympathize with patient or in any way offer assistance in controlling. I do not believe in bribing or coercing a patient and in as many cases as possible would have him come to my office alone. It not only makes sure of no sympathetic interruptions, but it teaches the child bravery. He will then depend upon the dentist for protection, and do not deceive by saying you will not hurt, and then break your promise. I never tell a patient, especially a child, that I will not hurt, unless I am absolutely sure, which is seldom. I often find it a splendid idea to explain the nature of the pain as nearly as possible. Be pleasant and sociable with the child, but be firm and decided as well. Lead him to believe there is but one way to do the operation and it must be thorough. Do not get angry with the child and let him know it; it doesn't matter so much if he gets angry with you occasionally.

To illustrate, let me relate a case of management which took place during my senior year at college. A little girl, about eight years old, was given me for examination. She was delicate and nervous, which I discovered in a moment at the chair. I allowed her mother, who accompanied her, to witness the examination. I decided to insert five tin fillings, and after giving the mother a seat behind the chair, proceeded to remove the debris from one of the cavities, being careful not to cause any pain. I partially prepared four of the cavities and filled with temporary stopping, then made an appointment with her for another sitting. She came on time, accompanied again by her mother. I put the dam on one of the molars and proceeded to finish the preparation of cavity, and was getting along nicely when the mother interrupted by saying: "Jennie, I am so sorry for you; can you stand that dam a little longer?" At that the tears streamed down the child's cheeks, although before she was as cheerful as anyone could be, even under more pleasant circumstances. I therefore asked her mother to have a seat at the rear of my chair, a considerable distance away. In five minutes I had the child's courage restored, and continued work until a tin filling was in place, then changed the dam to the other side of the mouth and put in one

cement comes nearest meeting all requirements in deciduous teeth, though in some mouths it wastes away very readily. It is easy of adaptation and is used more generally than other material, owing to its color and its nonconductive properties. Amalgam is a good filling material for deciduous teeth, if used before the decay has gone too far. I prefer tin for the molars when the case will permit of its use; it is easy of adaptation and not so dense as amalgam or cement. In deciduous teeth it is quite necessary to have a filling material that is soft, as the teeth for a considerable time during absorption depend mostly on the gums for support. In filling a molar which has been treated and the canals filled, I make a floor of cement over the root-filling and allow it to set, then fill the cavity with tin-foil

We must know how to handle pulp exposures and pulpless teeth, as most patients will not seek a dentist until they have one of these troubles. The first and a very important thing is to stop the toothache, for the time being at least, and not hurt the child. If the case is simple exposure in an inflammatory condition, carefully remove what debris is necessary and dry cavity, apply carbolic acid and cocain on a pellet of cotton, and seal with temporary stopping, allowing this to remain about twenty-four hours. At next sitting remove stopping and apply a small pellet of devitalizing fiber moistened with carbolic acid and cocain. Allow this to remain twenty-four or forty-eight hours, then remove and apply tannic acid and glycerin on cotton and allow this to remain in five days or a week. At next sitting remove pulp, dry the canals and treat with oil of eucalyptus, leaving three days. At next sitting dry the canals and fill with Gilbert's temporary stopping dissolved in chloroform.

With putrescent pulps the first treatment will be entirely different from that in the first stage of inflammation. Relief may be given by opening into the pulp-chamber and allowing the gas to escape. I have had cases where the pain was so great that it was necessary to use cold applications to stop the pain, then I burred into the pulp-chamber during the relapse of pain. A very good remedy is to treat with tannic acid and glycerin after opening into the canal. Allow this to remain in two or three days, when the soreness will have subsided and the pulp contracted. At next sitting pulp may be be removed, and then continue treatment in the usual way.

In treating abscesses in deciduous teeth I employ the same remedies as in permanent teeth, except that I do not use so great a quan-

Digests.

MEDICINAL PREVENTION OF DENTAL DECAY. By G. H. Winkler, M. D., D. D. S., New York. Dental decay is a subject which should be brought within the scope of the physician. The researches of Professor Miller, of Dr. J. Leon Williams and of Dr. G. V. Black have demonstrated beyond any question that bacteria are present in all decay of the teeth, and their conclusion that microorganisms are the cause of dental decay has been generally accepted. The slides exhibited recently in New York by Dr. Williams have exposed these germs in the very act of their destructive work. Bacteria, whenever they can gain a lodgment in defects of the enamel, or when in diseased conditions of the mouth can become felted or glued to the surfaces of the teeth, excrete lactic acid. This breaks down the calcium salts of the enamel and procures for the bacteria an opportunity to burrow into the enamel tissue or cement which binds the enamel rods together, and later on into the dentinal tubuli, excreting their acid as they burrow, thus producing decay. The conclusion has therefore been reached that these little organisms are the primary cause of dental caries. I do not accept this conclusion; on the contrary I am convinced that while bacteria are present in all dental cavities, and are the direct cause of decay in some cases, the primary cause of dental decay in a majority of instances lies in a morbid state of the system which gives into the mouth perverted secretions. Close study of the subject, careful observation of the conditions in the mouth, and above all, successful prevention of decay by medicinal treatment, compel me to dissent from the generally accepted theory and enable me to divide the causes of dental caries into three classes. Two of these are pure dyscrasiæ, amenable to medicinal treatment. The third is a local disturbance requiring operative interference. The first class, which is the most destructive when it exists, consists of a pathological condition of the mucous glands of the mouth, more especially those situated on the gingival borders or free margins of the gums, which results in the excretion of an acrid corrosive fluid which excoriates the epithelium and corrodes the teeth, usually forming cavities around their necks. The mucous glands in a state of health secrete a clear, colorless liquid, very slightly acid, which bathes the necks and crowns of the teeth, dissolving and washing away any particles

more filling. I then asked the child if she would come alone for the next sitting, explaining to the mother why I would have her absent herself. She had seen the result, and so agreed to let the child come alone. This was one way to educate the parent, not only what should be done, but how easily it was done, which was a surprise to her.

I have had some children, when beginning their work, so nervous that it seemed almost impossible to get them under control, and if you will inquire into the history of such patients, you will find in most cases that some dentist has deceived them by saying, "It will not hurt you a bit," and then plunged an excavator into a sensitive place or jerked a tooth out. A dentist who will thus take advantage of a child does not deserve any patients. I believe the meanest trick I ever saw played on a child was by a dentist and a student. Both the dentist and the mother had persuaded and threatened the child in vain. At last the dentist fixed a cork and showed the student how he wanted it placed in the mouth and held. The student stationed himself in a convenient place while the dentist asked the child to open her mouth that he might see the tooth, and the cork having been slipped into the mouth, the tooth was quickly extracted. It was gone, but so was her confidence in all dentists, and will be for years, though she be treated very tenderly.

OPIUM.—A contracted pupil is always a contraindication to the use of this drug.

TORTICOLLIS.—Dr. Gillette (*Pediatrics*) reports three cases of torticollis due to adenoid vegetations and chronic hypertrophy of the tonsils. One case was cured by the removal of the local trouble and the others were greatly benefited.

THE "JAG CURE."—A noted London chemist has analyzed Keeley's bichlorid cure with the following result: Water, 31.61 per cent; sugar, 6 per cent; a trace of mineral salts, principally lime, and 27.55 per cent of strong alcohol.—*Nature.*

TO REMOVE NITRATE OF SILVER STAINS FROM CLOTHING.—A solution of iodin in ammonia water, the so-called colorless tincture, will remove nitrate-of-silver stains from the hands, clothing, etc., but owing to the danger of the formation of nitrogen iodid, which is a powerful explosive, it is not recommended. A solution of iodid of potassium dissolved in water is nearly as quick and quite as effective. Dissolve fifteen parts of iodid of potassium in fifty parts of water, and to the solution add ten parts of iodid. When the latter is dissolved add sufficient water to make 500 parts. Keep in a well-stoppered bottle. Treat the spots with this, and after a few minutes with a 10-per-cent solution of caustic soda, which will remove the silver iodid formed by the first treatment.—*The National Druggist.*

corrosive action of mineral acids, such as the appearance of the first class always presents. The condition produces a vitiated state of the oral secretions, acid in reaction, and marked by an apparent lack of some deterrent element which in normal saliva and mucus prevents the propagation and activity of bacteria. The latter, in the absence or lack of this deterrent, multiply enormously, and the acid condition of the mouth then may be attributable partly to the vitiated condition of the secretions and partly to the acid excretions of innumerable colonies of bacteria.

There are in the serum of the blood in health certain albuminous substances, pointed out by a number of eminent scientists, which have been called by Hankin "defensive proteids." These proteids have been found in the serum of the blood of different animals, at times destructive to anthrax, again attenuating to the same germs—that is, shriveling and rendering them innocuous; and still again, in other cases, antitoxic or defensive against the toxic excretions of germs; upon which theory has been based the medication in the line of antitoxic treatment for various diseases which now occupies the most earnest attention of the secular as well as the medical mind.

Owing to the presence in healthy persons of these defensive proteids, the secretions of the mucous surfaces are believed to be charged with a sufficient amount of some deterrent substance to render them safe against the attacks of microorganisms which might be taken into the system. Every one living in a great city receives more or less frequently into the alimentary as well as respiratory tracts, dust which is contaminated with various germs of disease, but these germs, coming into contact with the deterrent agent of normal mucous secretions furnished from the defensive proteids, are either destroyed or rendered innocuous, and are cast out. If, however, a change of health occurs by which that function which furnishes to our bodies the defensive proteids is held in abeyance, and we are thus deprived of them, the germs which we take in may inoculate us to our injury, or even to death. The conditions which prevail in the mouth are as follows:—Bacteria are present in all mouths, healthy or diseased, they are present whether there is dental decay going on or not; at times they are in small numbers and apparently innocuous; again they are found in numerous quantities, destroying the teeth with various degrees of rapidity, from a small number of cavities to an apparent melting away of the entire dental arch. They

of food that may lodge about them. In the pathological condition which we are now considering this normal condition yields to the one above described, and, apart from damage done to the gums and teeth, not infrequently produces serious disturbance of digestion.

The appearance of the disease exhibits usually a line of inflammation extending along the festoons of the gums and interdental spaces, more frequently conspicuous about the palatal and lingual aspects of the molars, while at times the entire gingival borders are involved. The discoloration in some cases is so slight as to require close scrutiny to detect it; at other times the diseased borders are turgid and purple in color; again, a crimson line marks the site of the affection, and in more advanced stages we have raw surfaces and phagedenic ulcerations.

The glandular excretion in some patients is clear, limpid, and sharply acid; the teeth appear clean, but present slight erosions at their necks, which are of the same color as the teeth, firm to the pressure of an instrument, but exquisitely sensitive; or the erosions may present the light-brown and sometimes the chalky-white appearance of rapid acid disintegration, soft in feeling, with pits here and there along the line of decalcification, and like the first extremely sensitive. In other cases the excretion is turbid, viscid, excoriating, corrosive and fetid, covering the teeth with a murky or yellowish slime which no amount of cleaning can keep off, imparting a disagreeable taste to the mouth, especially on waking in the morning, and an offensive odor to the breath. Beneath this tenacious exudate the teeth are covered with extensive decays, which present edges so friable as to be readily broken down by the pressure of the finger nail. So much for the first of my classes of the causes of dental caries; it is a simple dyscrasia and yields readily to medicinal treatment. Creosote in minute dose, frequently repeated during one to three weeks, is a specific for this pathological condition. The terrible destruction of dental tissue by corrosive excretions from the gingival borders is at once arrested by this remedy.

The cause of the second class of dental decay is also a morbid state of the system, which renders the fluids of the mouth destructive to the teeth and propitious to the enormous multiplication of microorganisms which by their acid excretions and their borings prove very destructive. The acid in the mouth in this class has rather more the characteristics of weak vegetable acids than the rapid

decay sounds very much to me like saying that dyspepsia is the cause of dyspepsia. The earlier years of puberty and the period of gestation are especially the periods when the ravages of decay from the first two of the above classes are most pronounced, and then it is that the mouth should be most carefully watched and intelligent medicinal treatment be invoked to preserve the teeth. Treatment of from one to three weeks, according to severity, is sufficient to bring cases under control; in the case of young persons an examination should be made every three or four months during the first two or three years after the condition has manifested itself, and treatment be again resorted to if needed, for it is not certain that there may not be a recurrence of the dyscrasia within this period.

Cleanliness of the teeth and mouth and, when the presence of acid prevails, the use of milk of magnesia, especially at night on retiring, is good. It covers the teeth with an alkalin film against which the acid for hours exhausts itself. This care is a repulse of the vitiated secretions after they have been poured out into the mouth. Medicinal treatment is a stroke aimed at the fountain head (or source) of the infection, and when skillfully delivered frees the mouth at once of its foul condition and its acid excretions.

I am fully persuaded that more than fifty per cent of dental caries is absolutely preventable by medicines internally administered which act specifically in the mouth.—*N. Y. Med. Jour., July, 1897.*

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ANTERIOR PILLARS OF THE FAUCES—ETIOLOGY AND TREATMENT. By George T. Carpenter, M. D., D. D. S., Chicago. Read before Dental Section, American Medical Association, Philadelphia, June, 1897. It is the dark red or reddish-blue color, which is a venous stasis of the pillars and uvula and their shining, sticky, mucous surfaces, that I wish to consider. I find that in a large number of persons visiting my office for dental services this abnormal condition is present. These parts are easily brought to view by having the patient breathe through the mouth. The patients do not complain of a sore throat but of a fetid breath and sometimes a disagreeable taste in the mouth. The venous stasis of the pillars acts as a sentinel, the etiology of which is not found in the erupting molar, but will be found in the tonsil or posterior nares. The tonsil may have little or no inflammatory action, and the crypts may or may not be filled with a cheesy exudate, and still their slug-

are in all mouths at all times, yet they are almost entirely in abeyance in some mouths while they are rampant and destructive in others. In the same mouth we find them asserting no influence at some periods of life, while at other periods we find them quite destructive. I hold that these facts are due to the character of the secretions which bathe the mouth. When we are in a state of health and our defensive proteids are in normal and protecting quantity, the bacteria are able to survive only in small numbers and in favorable locations; when a change occurs and the deterrent element in the secretions is wanting, we suffer from the destructive agency of myriads of microorganisms.

The appearance of the mouth in this class of etiological factors shows generally very slight inflammation, although the gums are sometimes swollen and bleed very readily. The entire mouth is bathed in acid except after some minutes of mastication, whereby the alkalin saliva has overcome the acid, and the teeth are affected by decay, more or less extensive, which is characterized by a very light brown or chalky-white color and by rapid progress. The treatment of the above class is not so well defined as the first, and remedies have to be chosen with some discrimination from a number which are employed. These are very simple: the salts of mercury, potassium, calcium, charcoal, creosote, etc., are the most potent, administered in doses so small that there is no general systemic disturbance from their use; yet their action upon the diseased conditions of the mouth is so pronounced as to be nearly specific.

The third class in my division of the etiology of dental caries constitutes that form of decay which is due not to a dyscrasia, but simply to acid-excreting bacteria which are lodged in sheltering localities about the teeth. The sulci in the crowns of molars and bicuspids, pits or defects in enamel, malformation of teeth or a crowded condition of them, all afford lodgment for the bacteria of the mouth, and it is here only a question of time when their acid excretions will dissolve the lime salts and decay begins. The only treatment for this class is operative interference.

It seems to me, in conclusion, that the cause of decay of the teeth lies in abnormal or defective conditions. In the first two classes, in abnormal or defective conditions of the secretions of the mouth; in the third class, in abnormal or defective conditions of the teeth themselves. To say that bacteria are the cause of dental

gish condition will produce a foul-smelling secretion and absorption of the lymphatics will follow. Also stenosis and chronic catarrhal conditions of the posterior nares will produce a dropping in the pharynx and keep the pillars bathed with a foul secretion which will taint the breath and produce, through absorption, an abnormal appearance of the pillars. Treatment consists in antiseptic gargles, also an alkalin antiseptic wash, as Dobell's solution, used as a gargle or spray for the throat and spray for the nose. The tonsillar condition may be stimulated with silver nitrate, or the electric cautery may be used to advantage. When catarrhal conditions exist any stenosis should be corrected, and the nares and fauces cleansed every night and morning with an alkalin spray. In addition to this, two or three times a week iodin solution, two to ten grains to the ounce of water, with iodid of potassium and glycerin, will be found advantageous.—*Dental Register, August, 1897.*

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SERIES OF CLINICAL CASES. By Vida D. Latham, M.D., D.D.S., Chicago. Read before Dental Section, American Medical Association, June, 1897. Every practitioner of dentistry, at some time or other, sees cases of this nature, perhaps meeting the disease in its earliest form. If he is able to recognize it and sound a note of warning, even though he may prefer to refer the case to a specialist, he has done a great favor to the patient and has earned his gratitude.

Myeloid Sarcoma of the Jaw.—Not long since I saw a case which had been sent to a dentist for advice regarding a right superior third molar that was troublesome. The patient was told to have the tooth removed, "as the wisdom teeth were of no value," and this was accordingly done. But there was no advice or suggestion of anything suspicious about the thickening of the gum around the outer side of the tooth. After a few months the patient became a medical student, and as the socket showed some irritability a junior teacher and dentist in the university school was consulted. He pronounced the growth nothing but thickened gum, so it was snipped off and thrown into the cuspidor and the place touched with a counter-irritant. In a little while it was thought to be recurring, but the dentist said, "No; it was all right." And as he held a place in operative dentistry and was quiz-master on the subject, the matter was left on his advice. Only a few months later the student transferred to another school and happened to hear a lecture on the

subject, the importance of which started a feeling of uneasiness. At this time I made the acquaintance of the student, who consulted me for examination and advice. Truly the growth was small and seemingly innocent and fibroid in character, and I asked leave to watch the case for a short time. Finding that it grew larger, I advised thorough and immediate operation, as I feared a sarcomatous epulus. On account of the position of the former dentist and not wishing to seem to urge operation on a small matter, I suggested the consultation of an older and more experienced specialist than myself. After a little persuasion the patient consented to the removal of a small piece of tissue for examination. The opposite end of the tissues from the neighborhood of the periosteal surface, showed the early but rapidly growing and malignant nature of the tissue—a typical myeloid or giant-celled sarcoma. The patient, who knew something of the danger of such a growth, was eager for a thorough radical operation, which was performed by the consulting oral surgeon. After eighteen months there has been no recurrence. The great danger in this case lay in the fact that the growth first appeared behind and on the buccal surface of the gum, near the third molar, and its course of progression would have been up the palate process along the maxillary tuberosity and posterior palatine canal, so invading the antrum and palato-glossal folds. It is believed that myeloid sarcomata are common in the maxillæ, but Bland Sutton says they are rare and as a rule arise in connection with nasal process. In the maxillæ or mandible they arise from the body of the bone.

Small Spindle-Celled Sarcoma of the Palate.—In this case the patient, aged 33 years, had been in perfect health up to six months previous to the time he came under my observation. There appeared a thickening on the left lingual surface of the palate. At first the patient was but little concerned, thinking it only a local irritation, but as it slowly increased in size he consulted a dentist, who told him it was a chronic inflammatory growth and possibly due to his smoking a pipe. The habit was discontinued and the swelling treated by counter-irritation, which gave no relief. By this time the place was a source of annoyance, as the patient could not keep his tongue from it, and he determined to have it removed by his family physician. The latter, upon examination of the growth, found that it extended from the first molar to the soft palate, within half an inch of the uvula, and becoming suspicious of its nature he

decided to prepare for a radical operation and gained the patient's consent to do what he deemed best. The growth was periosteal in origin and was thoroughly extirpated, the teeth being extracted on that side and the alveolar border curetted, removing all tissue that looked dangerous or even suspicious. There has been no recurrence.

The differential diagnosis between palatal abscess and sarcoma shows the following points: Sarcoma, springing from the periosteum of the hard palate, appears as a soft, semi-elastic, more or less rapidly growing tumor, affecting the roof of the mouth. A palatal abscess, originating from any of the upper teeth or burrowing backwards beneath the bone and periosteum, or in the soft tissues forming the roof of the mouth, gives rise to pain and inflammation attends its development; it extends more rapidly and gives an elastic feeling of fluctuation. There is the evidence of a carious tooth, and in chronic cases the diagnosis can be made positively by using exploratory puncture.

Sarcoma of the Antrum.—The patient, a well-built boy of 15 years, complained of constant pain in the left upper first molar, which was treated. In about three weeks his cheek began to swell, and on returning to the dentist the boy was informed that the swelling was an abscess. Free incisions were made and no pus found. As he got no better and the pain continued, the patient left his dentist, going to one of the well-known advertising houses, and there was told to have the tooth extracted. This was done, and after the somewhat profuse hemorrhage which followed the pain was better. The swelling, however, did not disappear, and I saw the case upon recommendation of the family physician. The unilateral bulging of the antrum and upper displacement of the eye, the slight amount of pain, together with the history and previous treatment, led to the diagnosis of sarcoma of rapid growth. I gave the patient an unfavorable prognosis and urged a speedy removal of the upper jaw, which was done. Then the soft parts were laid back and the disease found to be very extensive, requiring removal of the entire superior maxilla and malar bones, the zygoma and part of the temporal and masseter muscles; hemorrhage was very severe, but was controlled by iodoform packing and comp. tincture benzoin. In spite of this bold and severe operation the disease recurred and the patient died from exhaustion. Microscope showed the tumor to be a small round-celled sarcoma.—*Ohio Dental Journal, August, 1897.*

HYPNOTIC CREED. The *Hypnotic Magazine* promulgates the following articles of belief, invites opinions, and announces that any proposition proven unsound will be stricken out: 1. The subject or hypnotized person is always responsible for his actions. 2. The subject's moral resistance is as strong in the hypnotic as in the waking state. 3. The subject will not accept a suggestion or a post-hypnotic suggestion which conflicts with his principles or his all-potent instinct of self-preservation. 4. The subject submits to be hypnotized; he can not be influenced against his will. 5. The subject can break the hypnotic sleep and return to his normal state of consciousness, even in defiance of the operator's suggestion. 6. The subject is never unconscious; the subjective mind is always on the alert. 7. The suggestions which can be made to take root most readily in the subjective mind are those which are to the therapeutic advantage of the subject. 8. Suggested sense delusions are accepted by the subject with the subconscious understanding that they are produced merely for the purpose of experiment. 9. A subject of good moral character cannot be induced by hypnotic suggestion to perform an act which he would consider immoral or even undignified in his waking state. 10. A subject of loose morals will exhibit the same characteristics in the hypnotic state, but will refuse to commit a crime which endangers his person (see "instinct of self-preservation," No. 3). 11. A crime committed through post-hypnotic suggestion by a subject (if such a thing were possible) would be assuredly bungled, since the carrying out of a complicated post-hypnotic suggestion entails a return to the state of active somnambulism, in which state inductive reasoning is impossible. 12. The assent of the subject is always necessary to the carrying out of every suggestion. 13. Auto-suggestion is more powerful than the suggestions of another. 14. The only harm which can result to a subject lies in the possible ill results of foolish tests which the subject is willing to carry out.

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RESECTION AND REPRODUCTION OF THE MAXILLÆ. By G. Lenox Curtis, M.D., New York. Read before Dental Section, American Medical Association, June, 1897. Like produces like; this applies to every department in nature. The periosteum under favorable conditions will reproduce the substance it covered. That of the ramus of the jaw will make only the thin lamina of

bone which nature has originally placed there, while that of the malar and the body of the jaw reproduces a dense structure differing materially in texture.

If the function of a part be permanently lost reproduction is not a necessity, nature supplying that part only which is required. If the teeth have been extracted with a view of remaining out, the portion of the jaw which is required to nourish them is not reproduced, but where the teeth are replaced and retained, all or sufficient of the bone is reproduced and reattaches them to the jaw. Such I have seen in active use for years.

The only condition I can ascribe for the removal of the periosteum is where it is attacked by disease, such as cancer, and the entire structure is destroyed. When the bone alone is destroyed, as in necrosis, cystic tumors, or from pressure by resistance of a growth, as tumor of the antrum, I see not the slightest necessity for removing this natural sheath, but on the contrary every reason for retaining it? But what can we say for the subject? Partially or wholly jawless, maimed and disfigured for life, a repulsive and pitiable object to others and a shrinking annoyance to himself. Is it not time to call a halt and look this matter squarely in the face?

Method of Preserving Contour of the Jaw.—My method to obtain the best results in the preservation of the contour of the jaw is by retaining the necrosed bone in position until the periosteum has been so strengthened by the reproduction as to allow nature's outlines to be maintained, employing it as an interosseous splint. Where it is necessary to remove the bone, I retain the contour of the face by gauze packing and change from time to time until the bone is sufficiently reproduced to resume its shape. This requires frequent dressing, so that the amount of pus may be kept at the minimum. The teeth are retained in position by means of interdental splints or ligatures. Where the teeth are lost I place other teeth in the opening when the wound is nearly closed, maintaining them by artificial support and allowing the bone to form around them. Where the destruction of the bone has been great and the periosteum too weak to retain the jaw in position during the process of reproduction, I use an interdental splint, in which the upper and lower teeth properly occlude. By hastening slowly, the danger of wounding the dental nerve is materially lessened.

Case in Practice.—In 1886 I operated on a young woman, age

23, with the following history: Four years previous, after suffering much pain in the face, which was swollen, a fistula appeared in the lower jaw, which was diagnosed as being from an abscessed tooth. The gums around the tooth were swollen and inflamed; the molars and second bicuspids were extracted and the pus continued to flow. Her health rapidly diminished, menses ceased and had not returned, although constantly under medical and surgical treatment. Examination revealed the emaciated condition of the patient. She was suffering from blood poisoning, was highly nervous and hysterical, had no desire for food and had lost the sympathy of her doctors and family. In the left inferior maxilla where the tooth had been extracted there were granulations. A boggy condition of the mucous membrane extended all along that side of the jaw. Over the ramus it was particularly inflamed. The probe readily passed beneath the periosteum and far up along the ramus. The patient was then too sick for an operation with a view to best results. The wound was cleansed daily to lessen the amount of pus, and for one month the patient was placed under most rigid restorative treatment with good results. I found that under the local stimulating treatment bone had been sufficiently reproduced to strengthen the periosteum, so that when I removed the dead jaw the contour was preserved. The cause of the trouble I found to be a wisdom tooth lying transversely at the neck of the jaw immediately under the condyle. This along with the granulations and debris was removed. The wound was packed continually until healthy granulations filled in the periosteum; the jaw, minus the teeth, was reproduced with all its usefulness. Complete restoration to health and a gain of twenty pounds in weight followed this work. The nerves and vessels in the jaw were not injured and no paralysis resulted.

Osseous Tumor of the Antrum—Operation.—March 25, 1893, I operated on a lad fifteen years of age, who gave the following history: Three years before, while at play, he ran against a lamp-post, striking the left side of his face and bruising it severely. A year later there appeared on the face, over the malar bone, a hard lump, which continued to increase until it was the size of a hen's egg, preventing the boy from seeing with that eye objects on the ground near by without bending his head. He had not realized any special pain or discomfort from the tumor. Thinking the trouble arose from the abscessed teeth, his dentist extracted the upper left

first bicuspid, which showed no evidence of being diseased. I diagnosed an osseous tumor of the antrum and found that the malar and superior maxillary bones were completely destroyed by the direct pressure against them, only the periosteum remaining. Not only was the tumor directed outward but downward, depressing the roof of the mouth and extending beyond the alveolar process, against the buccinator muscle. An incision was made through the periosteum, encircling the teeth as seen in the specimen here presented, in which the tumor and teeth are attached, and it will be noticed that only a small part of the alveolar process remained intact. This with the teeth was removed, the entire side of the face falling into the cavity made by their absence, so completely were the malar and the superior maxillary bones destroyed; only the inferior orbital ridge and zygoma resisting the pressure of the tumor. A profuse hemorrhage followed its removal, but was readily checked by hot water. The wound was packed with aristol and gauze and the contour of the face secured. The periosteum united with sutures. Through this opening the wound was dressed until the shape of the face was permanently restored. Time of operation twenty-five minutes. The following day there was considerable edema, which readily subsided. From day to day the dressing was changed until the periosteum could support itself, and in two weeks the case was dismissed from the hospital. The antrum was douched daily until restoration was complete. An artificial denture was made to replace those lost, to give the normal fullness to the mouth. In this operation there was no external wound, consequently no necessity for ligature and no scarring of the face, which would necessarily follow had the operation been done on the lines drawn in general surgery. The wound completely healed in six weeks with no deformity of the face. I have seen the case from time to time and it is perfectly satisfactory.—*Ohio Dental Journal, August, 1897.*

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REMARKS UPON THE NON-OPERATIVE TREATMENT OF CHRONIC SUPPURATIVE DISEASE OF THE ANTRUM AND VAULT OF THE TYMPANUM. By A. H. Buck, M.D., New York. Read at the British Medical Association, Montreal, Sept. 3, 1897. Recent otological literature is full of treatises which deal with the subject of new operative methods for the cure of chronic suppurative processes in the vault of the tympanum and the mastoid

antrum. Of these operations ossiculectomy (for those cases in which the disease is limited to a small area within the tympanum) and the so-called Stacke's operation (for those in which the antrum is also involved) are the two representative types. It is not necessary here to enter into any further details regarding these operations or to discuss their relative merits. Suffice it to say that both of them have passed the probationary stage and are now generally accepted by otologists as safe and effective surgical procedures for the cure of the pathological conditions referred to above. Conceding, therefore, as I do, the value and the safety of these operations, I am nevertheless disposed to believe that they are resorted to in many cases in which the simpler cleansing methods would be found to be quite as effective in curing the disease. I should perhaps qualify this remark by stating that it has reference mainly to cases which are seen in private practice. In the treatment of infirmary patients it is not often possible in our large cities to devote at least half an hour, twice or three times a week, to a single case; and, furthermore, our experience in New York has shown that infirmary patients cannot be depended upon to attend the institution regularly for treatment. But, unless these cleansing procedures are carried out in a minute and painstaking fashion, and at rather frequent intervals (two or three times a week), at best only a temporary amelioration of the disease will be secured. I am satisfied, therefore, that in dealing with this class of patients the otologist is quite right in urging the operative rather than the non-operative mode of treatment. In private practice, however, the conditions are quite different. The surgeon can give to this class of cases all the time that may be required, and the patients themselves can be depended upon to be regular in their attendance. Then again, many private patients object strongly to being subjected to an operation which requires the use of ether or chloroform as an anesthetic, and which may keep them confined to the bed or to the house for several days. It is natural, therefore, that these individuals, when the situation is laid before them, should prefer to have the cleansing or non-operative method of treatment tried first. It is not in every case, however—be it clearly understood—that we can safely offer this choice to the patient. Symptoms may have already developed which point to an extension of the disease to important neighboring organs, and in that case we must recommend

strongly the more radical plan of treatment by operation—either Stacke's or the regular mastoid operation. But in most if not all of the cases in which a simple ossiculectomy is performed, and in quite a large proportion of those operated upon by Stacke's method, no such threatening symptoms exist, and consequently we are at liberty to deal with the problem before us in a more leisurely manner. If, in such cases, the opening in the tympanic membrane through which the pus and other products of the disease escape into the external auditory canal is fairly large—say two or three millimetres in diameter—and particularly if it occupies a high position, there can be no question about the propriety of giving the cleansing method a fair trial. On the other hand, if the opening is small—perhaps not more than a millimetre in diameter—or if it occupies a low position, the simple cleansing method is more likely to fail. But even here a limited myringectomy may suffice to overcome this drawback and so place these cases on a par with the others. If, however, the pus finds an outlet through the membrana flaccida, it is better to proceed at once to an ossiculectomy (including, of course, a myringectomy). The necessity for a Stacke's operation or for a mastoid operation in this class of non-urgent cases becomes clear when both the cleansing method and a simple ossiculectomy (including the anvil as well as the hammer) have proved unsuccessful in arresting the foul-smelling discharge.

As regards the details of the cleansing method, it is enough to state here that it consists essentially of only two steps, viz., the removal, chiefly by mechanical means, of all granulation tissue, cast-off epithelium, and detritus from the diseased tympanic cavity or antrum, and the destruction by chemical means of all pathogenic germs. Injections of hydrogen dioxid through variously curved glass tubes play a very important part in the procedure, not simply on account of the germicidal action of this fluid, but largely because the active effervescence, which at once takes place when it comes in contact with decomposing organic material, aids in dislodging the obstructing substances. When once the cavity has been cleared of all these and rendered aseptic, powdered iodoform or one of the more recent antiseptic powders (europhen, aristol, etc.) should be introduced in liberal quantity and allowed to remain there indefinitely. This, in brief, is the mode of treatment which I have termed the cleansing method.—*Medical Record, Sept. 1897.*

DIAGNOSIS OF HEADACHES. Pershing has analyzed the symptoms of the diseases in which headache is liable to be a prominent feature and has arranged them in a table, so that by comparing the symptoms of an individual case with the headings and subheadings of the table the probable diagnosis can be quickly found (*Colorado Med. Jour., Jour. of Nerv. and Ment. Dis.*). Headache.—Pain in the head not limited to the distribution of particular nerves. 1. There is organic disease of the brain or its membranes, shown not merely by the severity and persistence of the headache, but also by the occurrence of some more positive signs—e. g., paralysis of ocular muscles, face, optic neuritis or optic atrophy: Jacksonian epilepsy, etc. If delirium or stupor occurs, the headache still continues. Vomiting common. (a) Onset sudden or very rapid, following an injury or occurring in an aged or insane person without evidence of infection. Convulsions, followed by paralysis on side opposite the headache. Sopor and coma with slowness of pulse supreme.—Meningeal hemorrhage. (b) Onset gradual but acute, with fever. A source of intracranial infection or irritation present. Whole course short. General hyperesthesia common in early stage. Spasm of neck, general convulsions and cranial nerve symptoms, such as ptosis, strabismus, etc. Optic neuritis occasional. Temperature irregular.—Meningitis. (c) Onset rapid or slow. Source of purulent infection. Temperature irregular. There may be rigors, followed by fever and sweating.—Abscess. (d) Onset slow. Optic neuritis. Temperature usually normal. No sign of suppuration. Tumor. (e) Onset slow, without fever and intense optic neuritis or slow pulse. Patient alcoholic or syphilitic. Organic disease indicated by spasm or paralysis in domain of cranial nerves, rarely in limbs.—Chronic meningitis.

2. Positive signs of organic disease of the brain or membranes absent, but evidence that blood-vessels are diseased. (a) Patient is past forty. The arteries are atheromatous. Heart often hypertrophied, and albumen usually found in the urine.—Arterio-sclerosis. (b) Age under forty. Headache chiefly nocturnal and accompanied by insomnia. Syphilitic history.—Syphilitic endarteritis.

3. No organic disease of brain membranes or vessels. (a) Headache periodic. Pain unilateral, accompanied by nausea and intolerance of light or noise. Family history of similar attacks or of epilepsy or other neuroses.—Migraine.

4. No distinct periodicity. Pain not unilateral. Headache appears at same time as fever, and disappears if delirium supervenes. There is evidence of general infection without any unequivocal sign of organic disease of the brain or its membranes.—Infectious fever.

5. There is no infection, but there is evidence of a toxic substance active in the system. (a) Urine contains sugar. Patient suffers from polyuria, thirst, weakness, etc.—Diabetes. (b) Urine contains albumen or casts or both. Pallor and edema often manifest. There may be a characteristic retinitis or optic neuritis.—Uremia. (c) Urine free from albumen and sugar. Headache worse in early morning and tends to wear off during the day. Uric acid diathesis or gouty deposits.—Gout. (d) History of excessive consumption of alcohol. There may be initiative dyspepsia, insomnia, tremor, etc.—Alcoholism. (e) Perverted digestion. Headache dull, comes on soon after eating, or is associated with the eating of some particular food, and is temporarily relieved by purgatives and intestinal antiseptics.—Indigestion. (f) Patient exposed to lead. There may be a blue line on the gums, colic with constipation or bilateral wrist drop.—Plumbism.

6. No infective or toxic cause, but the cerebral circulation is disturbed. (a) Headache throbbing follows excitement or exertion, and may be associated with flushed face. Increased by coughing, straining or lowering head.—Active Hyperemia. (b) Headache dull, heavy. Return of venous blood obstructed.—Passive Hyperemia. (c) Heart action weak or blood impoverished.—Anemia.

7. No infective, toxic or circulatory cause, but there is a reflex disturbance. (a) Pain associated with the use of the eyes for near work, and is felt in the brow or back of the eyes, or appears to extend from the eyes to the back of neck. An error of refraction is present or weakness of one or more of the extra ocular muscles.—Eye Strain. (b) Pain associated with disease of the nose or its adjacent sinuses. Inner wall of orbit may be tender or headache markedly increased by touching the middle turbinated bone with a probe.—Nasal Headache.

8. No organic, toxic, reflex or circulatory cause apparent. (a) Nerve force exhausted from any cause. Sensations in head may be disagreeable rather than painful, and are described as queer—tightness or looseness of scalp, lightness or heaviness of the head, etc. Spinal tenderness and morbid fears common.—Neurasthenia.

(b) Headache appears and disappears with emotional changes or in response to suggestion, often limited to a small spot at vertex (clavus). Various signs of hysteria may be present.—Hysteria.

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ORAL SURGERY. By Edmund W. Roughton, B. S., M. D. (Lond.), F. R. C. S., Eng. Diseases of the Glands. *Xerostoma.* In this affection the secretions of the salivary and buccal glands are greatly diminished or entirely suppressed. The tongue is red, dry and cracked, and the mucous membrane of the cheeks pale, smooth, shining and dry. Mastication, deglutition and articulation are rendered difficult and painful. As a rule the general health is good. Very little is known of the pathology of this disease. It is supposed to be due to some affection of the nerve centers controlling the salivary secretion. It is a rare condition and is most often met with in women with neurotic tendencies.

Treatment. The galvanic current is the only therapeutic agent known to have a beneficial effect.

Salivation Ptyalism. Increased secretion of saliva is a constant symptom in most of the diseases of the mouth, especially mercurial and ulcerative stomatitis. It also occurs during teething in infants, during examination of the mouth or throat, and during dental operations. It may result from any local irritation of the mouth, such as biting the tongue, taking irritating particles of food, or chewing tobacco. Certain drugs, such as mercury, iodin, copper and lead produce ptyalism. It is also a symptom of certain affections of the stomach and intestines, and is not infrequent during pregnancy. It may result from any irritation of the trigeminal or glossopharyngeal nerves, or may be purely hysterical. The increased secretion is accompanied by a dragging sensation in the region of the parotid glands and masseter muscles, and by a metallic taste in the mouth. The quantity of saliva secreted may amount to several pints during the day. Some of this is expectorated or runs out of the mouth, irritating the skin of the lips and chin, and the rest of it is swallowed, often upsetting the function of the stomach and intestines, leading to anorexia, emaciation, etc. The saliva is nearly always turbid and may be viscid, or thin and watery; it is often very offensive. Its specific gravity is at first high, even as much as 1050, but later it sinks below normal, even as low as 1001. Its reaction may be acid, neutral, or alkaline.

Treatment consists in removing the cause and prescribing astringent mouth washes.

Parotitis. Inflammation of the parotid gland may result from injury, concretions in the duct of Stenson, foreign bodies, the effect of cold, or as a secondary affection after some injury or disease of the abdomen. In most cases parotitis is idiopathic, and is due to infection by a specific microorganism. *Idiopathic parotitis* (*mumps*) occurs chiefly in children from 5 to 15 years of age. It usually occurs in epidemics, but may occur sporadically; in any case it is due to infection directly or indirectly from another person suffering from the same disease. The period of incubation may vary from three to twenty-one days. The disease begins with pains about the ears, a feeling of tension when the mouth is opened and slight febrile symptoms. After two or three days the gland begins to swell and causes great pain in opening the mouth and in chewing. One or both sides may be affected; the swelling is limited above by the zygoma and below by the stylo-maxillary ligament; the ear seems raised and forced outwards, and the cheek swollen. The submaxillary and sublingual glands, and even the lymphatic glands and spleen may also become swollen. On the subsidence of the inflammation in one parotid, the other, if not already affected, becomes inflamed, and sometimes the testis, ovary or mamma. Usually only one testis is affected, sometimes both are involved; atrophy of the testis and impotence may result.

The *treatment* of an ordinary attack of mumps consists in keeping the patient indoors, giving a laxative, and in covering the part with cotton wool or a poppy fomentation.

Secondary or Metastatic Parotitis occurs most commonly as a sequel to typhoid fever, usually during the third or fourth week. It may also follow upon operations involving the abdominal cavity, or injuries of the generative organs. The symptoms are at first the same as those of the idiopathic variety, but pain is not such a prominent symptom on account of the prostrate condition in which the patient usually is.

The swelling is generally very considerable. Suppuration frequently occurs and is accompanied by high temperature. As the pus forms, the swelling softens and the skin over it becomes red and glazed; after a few days the abscess bursts, as a rule upon the face, but sometimes in the external auditory meatus. The process of dis-

integration may spread from the parotid to the surrounding parts, leading to suppuration of the masseters and pterygoids, thrombosis of the adjacent veins, and sometimes pyemia. The facial nerve is often involved, causing paralysis of the muscles of expression. The occurrence of suppurative parotitis is always serious and adds to the gravity of the prognosis of the affection it complicates.

Treatment consists in early and free evacuation of pus and the administration of stimulants.—*Brit. Jour. Dent. Sc., Sept. 1897.*

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"LE ROI EST MORT. VIVE LE ROI!" The recent gathering at Old Point Comfort has proven to be in some respects the most important which has taken place in the history of American dental meetings. The scientific factor was on the whole, and as compared with former meetings, of average or perhaps greater importance, measured by the results obtained. But the work accomplished affecting dental organization and dental education in this country are the features which most prominently claimed attention, and for which the meeting will be most memorable.

The circumstances of the meeting were unique. At no time in the history of our calling has so noteworthy and important a gathering of American dental practitioners been held. They have met in greater numbers, but the objects which have heretofore drawn the profession together have been less important in character and diverse in kind. The two great society organizations, the American and Southern Dental Associations, the National Association of Dental Examiners representing the legislative, and the National Association of Dental Faculties the educational motive in dentistry, met with a common purpose—unification and harmonization of their interests for the advancement of dentistry.

That there should be differences, even dissension, where such broad ground was to be covered, and where so many different opinions were to be reconciled, was necessary and unavoidable, but out of the multitude of counsels wisdom asserted herself and a spirit of tolerance prevailed, to the end that the sectional chasm which for years has divided our national professional interest has been at last bridged over, if not obliterated. The American Dental Association, with its long and honorable record of good work accomplished for the advancement of American dentistry, is numbered with the things that have been, and the future of our profession is to find its national

outlook and the embodiment of its new hopes in an organization which is to be truly national in character. As President Truman in his able address has truly said, "We have come to the parting of the ways," we have reached a point where, while we look back with sadness upon the death of the old, we reach forward with hopefulness to the birth of this new National Dental Association which has sprung into being not by accident, but at the behest of those who are animated by lofty purpose and that love of their chosen calling which knows no geographical or sectarian limits.

The unification of our national dental interest is now an accomplished fact; but while we rejoice over it and congratulate ourselves that such an advance step has been made, let it not be forgotten that much is yet to be done in order that our new infant shall not die from neglect or suffer for lack of sufficient nourishment. The leaders of dental progress have sounded the warning. Not only have they called for aid, but they have shown by long arrays of facts and figures that our larger representative societies do not receive the support they need in order to force them up and maintain them at the plane of their highest usefulness. Recently published data, as well as the opinions of those most competent to judge, force the conviction that but a very small proportion of the American dental profession give adherence or encouragement to society work. This is not as it should be. The progressive practitioner can no more do without the benefits accruing from dental society work than the society can exist without his encouraging support. The necessity is a mutual one, and as one thrives so does the other. Membership in dental societies has been classed as a professional duty; it is more than that, it is a professional privilege, and for both reasons or either alone no dentist should neglect his society interest. It is only a widespread acceptance of that belief which can insure to our national association the support necessary for its continued existence. Let every member of our profession realize that the obligation in this regard is a personal one, and the success of the new organization will be assured for all time.

The work toward unification of interest manifested between the larger organizations had its reflection in the deliberations of the Faculties' and Examiners' Associations. In the latter, despite the dogmatic and partisan effervescence of a few, the discussions were characterized and happily dominated by a spirit of conservatism

and harmony which is a credit and an honor to that body. Whatever exception may be taken to the methods by which some of its members have sought to enforce their views—and such are but a small minority—the results finally achieved should be cordially accepted by the whole profession as a step in advance.

Two important results achieved by the examiners are especially worthy of notice—viz, a revision of the Requirements for Obtaining Recognition, which is now more nearly in line with their right and power to enforce, and the promulgation of a minimum standard of preliminary educational requirement, which, as we interpret it, is technically in advance of the standard prescribed by the faculties for the same purpose. If such be the case, it is highly regrettable that such a difference was not harmonized, and still more regrettable that the reasonable and progressive scheme formulated by the examiners for securing a proper matriculate standard for the schools in the near future was not approved and adopted by the faculties. Whether or not the action of the examiners in this regard may be looked upon by the faculties as outside their sphere, is quite apart from the fact that the plan proposed is an admirable one, and under the circumstances the least that should have been adopted by the faculties. As the matter now stands on the question of a standard of preliminary requirement the Faculties' Association has retrograded, or at least has made no advance, which in this age amounts to the same thing.

The record of the last meeting of the National Association of Dental Examiners gives much promise of a realization on the part of that body as to just where their strength as a coercive factor in our dental educational system lies. We have taken exception to some of the acts of that body for the reason that in our judgment they indicated a tendency to usurp authority to which they were as an official body not entitled. On the other hand, we clearly recognize that through the powers vested in dental examining boards throughout the states the national association has it within its power to exercise a positive influence for good in dental education by preventing the licensing of incompetent men as practitioners of dentistry. While the exercise of that power is hedged about and conditioned by the diversity at present existing among the dental laws of the several states, the prime fact remains that the examining boards are the keepers of the portals of entry into dental

professional life. With the work and methods of the colleges they have nothing to do, nor can they trench upon that territory without weakening their legitimate influence for good. The proceedings of their last meeting indicate that the more judicial members have grasped that fact, and it is cause for congratulation that out of the chaotic mass of conflicting opinions heretofore manifested in this branch of dental interest, the essential factor upon which all of their coercive power for good rests is being realized, and we trust will be utilized. We would further commend the tendency toward the formation of a committee of conference between the Examiners' and Faculties' Associations. As the index of a higher civilization is the spirit of arbitration, so is the tendency to adjust differences of opinion between these two bodies evidence of a healthy tendency toward mutual reasonableness in carrying out the important work in which they are jointly concerned. When the record is complete, and the history of the Old Point Comfort meeting is written, we believe that the greatest good which its pages will show will be the decided progress made toward harmony and united effort in the uplifting of our profession.—*Editorial in Dental Cosmos, Sept. 1897.*

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ANCIENT METALLURGY. By Henry Leffmann, M. D., D. D. S. Read at Odontological Society of Pennsylvania, Feb. 13, 1897. Every one who has any knowledge of the history of chemistry knows that at one period the efforts of investigators were largely directed towards producing the precious metals from cheaper sources, and especially from the so-called base metals. As in so many other cases, however, accurate information as to the aims and methods of the alchemists is not widespread, and it was partly with a view of bringing some trustworthy data before you that I offered this paper. A very brief review of some general historic questions will be appropriate as an introduction. The origin of chemistry is lost in the obscurity of antiquity. Even the derivation and significance of the name have been subjects of dispute. The Greek form "chemeia" is first noted in a work of the fourth century of our era, although doubtless much older. It is now regarded as a Greek rendering of a name applied to Egypt; the word also means black, and various suggestions have been made concerning this. An eleventh century writer defined chemistry to be the art of preparing silver and gold.

Metallurgy must have been one of the earliest phases of chemic work. This would be expected *a priori* and is shown by the allusions in the earliest records among various nations. The Hebrew Scriptures are regarded as containing references to six metals—Au, Ag, Cu, Fe, Pb and Sn. According to Pliny, the word metal (Gr. *met'alla*) is derived from the fact that they occur in association with others in veins, but other meanings are also given. The precious metals, gold and silver, which occur native and have many striking properties, were in use at an early period, and there is evidence of the use of iron in Egypt in very early times. An incidental reference, showing the considerable antiquity of common metallurgic operations, is that in Proverbs xvii, 3: "The fining pot is for silver, and the furnace for gold: but the Lord trieth the hearts." The date is probably 500 B. C.

Positive evidence of the antiquity of the use of certain metals is obtained from the remains of ancient cities and temples. There has been so much successful digging during recent years that much of the hitherto-accepted ancient history has been overthrown, and it is unwise to express positive opinions as to the details of ancient civilization; but the following notes collected from some recent authorities, and seemingly trustworthy, may be offered: Schliemann found in one of the layers in the mound at Hissarlik, supposed to be remains of Homeric Troy, articles of gold and silver, a bar of pure copper, and shapeless masses of lead. Leaden objects are uncommon among Egyptian remains, but Diodorus states that sheet-lead was used in the hanging gardens of Babylon. The oldest coined money known is that of Lydia; it was an alloy of gold and silver. The Greek and Roman bronze coinage from 500 B. C. to 50 B. C. contained from three to thirty per cent of lead. This may have been put in to render the metal more fusible, but it may also have been a deliberate debasement by the government. References to lead occur in Homer and several other ancient writers. Mr. Eckfeldt, assayer at the United States mint at Philadelphia, has kindly given me a summary of the analyses of the Roman gold and silver coins in the mint collection. From this it appears that during the pagan period the coins were generally nearly pure metal.

In excavations at the site of the palace of Sargon, at Khordsaba, in 1854, votive tablets of different materials were found, to which a date of 700 B. C. is assigned. Four of these were examined by

manuscript of the eleventh century which is termed the "Diplosis of Moses"—that is, a receipt originated by Moses for doubling the quantity of gold. A somewhat confused list is given, in which the words copper, sulphur, arsenic, lead, and sandarac are mentioned, though there is a little uncertainty in some of the terms; then a process of manipulation, which lasts for three days. We are then told that the added alloy will all be converted into gold, with, as the writer wisely adds, "the grace of God."

Within the past decade considerable accurate information concerning the alchemists has been brought into a readable form by the labors of the well-known French chemist, Berthelot. It had long been known that there are in some of the great European libraries Greek manuscripts on alchemy. Under the patronage of a department of the government of France, and assisted by various specialists in archæology and philology, Berthelot succeeded in sifting out much important matter from these writings and making fac-similes of some of the texts and illustrations.

The oldest of these manuscripts is now in the library at Leyden, in Holland. It is a papyrus, partly in Greek and partly in demotic character, found in a tomb at Thebes. It is believed to have been written in the third century of the Christian era, and is the oldest authentic manuscript of Egyptian alchemy. It is probably one of the few books that escaped the general destruction of books on alchemy and magic ordered by Diocletian about the close of the third century. It contains a long list of metallurgic receipts written in bad Greek, and is considered to be a sort of memorandum receipt-book of a metal-smith. The receipts show that a large part of the earlier alchemy was devoted to deliberate falsification. Manuscripts of later date, though still quite ancient, are also known. In these are found allusions to the relations between the planets and the known metals, also pictures of apparatus, and many mystical signs and obscure formulæ. I have had a few of these reproduced as lantern-slides, which will be shown later. The text of the oldest Leyden manuscript contains over one hundred receipts, from which a few may be taken as examples. Unfortunately, the translation is not always positive. Names that seem familiar and intelligible to us may not have the significance that we assign to them. Thus, magnesia is now understood to mean magnesium oxid, but in ancient writings it often means an iron oxid, magnetic oxid (Fe_3O_4),

Berthelot; one is nearly pure gold, one nearly pure silver, one an alloy of tin and copper, much oxidized, and one magnesium carbonate. Another ancient article, a fragment of a vase, from a similar source, was found to be nearly pure antimony. This fact is quite remarkable, because pure antimony is even to-day very rarely employed, though its alloys are common. A votive figure from the same place was found to be pure copper, oxidized, however, to considerable depth.

These isolated instances are sufficient to show how early metallurgic operations began. Before passing to the consideration of alchemy, I wish to call attention to a feature of ancient metallurgy that has little to do with dentistry, but will be interesting because new to many. I refer to the use of lead pipes. This was quite familiar to the Romans. Tons of lead pipe have been dug up in various parts of Italy, and it has also been found in other parts of Europe that were under Roman domination. This pipe was made by folding sheets and securing the junction either by running melted lead along it or by the use of cement. Very often the name of the property-owner or of the plumber was imprinted on the sides of the pipe. Lanciani, the Italian archæologist, has described many of these inscriptions, and we learn, among other things, that women-plumbers were quite familiar to the ancient Romans. Such names as Julia Paula, Fabia Glycera, Aurelia Irene are among those given by Lanciani. Vitruvius, a Roman writer on architecture, who lived about the beginning of the Christian era, refers to the danger of chronic lead-poisoning from water passing through lead pipes.

Let us turn our attention to the special topic of alchemy. Whatever may have been the aspirations and efforts of the ancient Greeks and Hebrews towards the transmutations of metals, they have left no definite evidence in their literature of efforts in such directions. The Jewish mind, in antiquity at least, was not scientific; and the Greek mind failed to grasp the true scientific method; in fact, the Greek philosophers disdained and condemned systematic observation and experiment. In later centuries works were written and fraudulently ascribed to noted ancient personages, such as Moses, Democrites, Hermes, Solomon, Alexander, or Cleopatra. Indeed, it is very difficult to separate fact from fable and genuineness from fraud in this line of inquiry. As an example of this kind of apocryphal writing, I will refer to a paragraph in a

grown out of this coincidence, the discussion of which is not appropriate here. Various coincidences of a superficial character tended to connect the metals with the planets. The brightness of the sun accords with the rich brilliancy of gold; a very ancient allusion to this is in one of Pindar's odes. Similarly, the whiteness of silver corresponds to the paleness of the moon. The redness of Mars suggested iron, the bluish tint of Venus accorded with the lustre of the salts of copper. The dullness of the lustre of lead suggests a comparison with that of the planet Saturn. The assignments of Mercury, "the sparkling," and Jupiter, "the resplendent," have varied somewhat.

The list of relations between planets and metals has not always been as we now give it. In the earliest times certain alloys were regarded as distinct elements and classified as such. Thus, a natural alloy of gold and silver, called "electrum," and supposed to be a pure metal, was assigned to Jupiter. Tin was originally assigned to the planet Mercury, but later to Jupiter, when the metal, mercury, then called *hydrargyros*, was assigned to the innermost planet, to which its quick motion and sparkling lustre well suit it. Mercury was not known to the most ancient nations, but appears to have been discovered about 300 B. C. It was at first regarded as a sort of allotropic silver, if I may use a modern term, and represented by a crescent reversed, silver having been represented by the crescent upright. The notion that the native alloy of gold and silver, called electrum, is an element is found as late as the sixth century, in the works of Olympiodorus. Concerning this alloy there arose the not unnatural view that it could be made to yield either gold or silver at will. At the present day such a property would at once be regarded as proof of the existence of the two metals in the mass, but in earlier times such an explanation would not be suggested. The precipitation of copper from its solutions by the action of iron was regarded as the conversion of iron into copper; the small button of silver obtained by cupellation of lead-ores was regarded as a conversion of lead into silver. We know now that the silver is present in the original mass, but these ideas, which seem so simple and obvious to us, are matters of comparatively recent development.

The Egyptian alchemists regarded lead as the source of other metals, and as containing the transmuting agent; indeed, the term which we now translate lead originally covered any metal or alloy

or even some other dark mineral. Sal ammoniac now refers to ammonium chlorid, but originally it was applied to another substance not definitely understood. The term "chalk" is used with reference to a form of clay used as a flux.

There is some prominence given to receipts for the manufacture of an alloy called "*asem*," which is sometimes made of copper, tin, and mercury, sometimes of tin and mercury alone, sometimes more complex. Here are some translations from the receipts: "*Manufacture of Asem.*—Tin, twelve drachms; mercury, four drachms; Chio earth (a sort of clay), two drachms. Add the powdered earth to the melted tin, then the mercury, agitate with an iron rod and allow to cool. *Another Receipt for Asem.*—Take tin in small and soft pieces, four times refined, four parts; pure white copper, three parts; asem, one part. Melt these and then purify the mass several times, and it is ready for use. It will be asem of the finest quality, which will deceive experts." Here we have an evident intention to deceive by an alloy resembling silver.

Another receipt gives a method for augmenting gold—namely, adding an alloy of copper and lead, with perhaps zinc, for some of the terms used are obscure. You will all doubtless be interested in a receipt, written more than sixteen hundred years ago, for making gold-solder: "Gold, two parts; copper, one part; melt and granulate. If you wish a more brilliant color, add a little silver."

It is not necessary to multiply details. The text of these receipts shows a merely empiric metallurgy. Here and there we note a mystical trend, which becomes more marked in later writers. The ancient conception that all matter originates from one form contributed towards a belief in transmutation, and when motive of cupidity had led to the discovery of methods of imitating the precious metals by alloys which deceived even experts, it was no very great step to self-deception and the development of the futile search for the philosopher's stone.

An interesting feature of the early metallurgy was the supposed relation between the metals and the planets. We retain many traces of this to-day. Lead-poisoning is often called saturnine poisoning, silver nitrate is called *lunar caustic*, the preparations of iron are called martian preparations. By a chance, the number of moving stars visible to the naked eye is also the number of days in the quarterly period of the moon, and interesting usages have

that was white and fusible. It will not be necessary to follow this phase of the subject further, and I pass to some brief allusions to forms of apparatus.

Enjoying as we do at the present time the benefit of instruments of precision and methods of inquiry by which opaque materials are open to our examination, we cannot appreciate the difficulties of manipulation under which the earlier workers labored. Even as late as the year 1777 we find Carl Wilhelm Scheele using pigs' bladders for collecting and studying the gases of the atmosphere.

The forms of apparatus that are figured in the alchemic manuscripts are principally those of distillation and crucible operations. Those that I will show on the screen are copies of Berthelot's *facsimiles* from a manuscript of the eleventh century now at Venice. There are inscriptions on various parts of the figures, and probably some of these were actually written on the apparatus, for these workers often mixed mysticism with practical ideas. Figures of similar apparatus are found in a fifteenth century manuscript now at Paris, and although there are some changes, yet we are still struck by the slowness with which progress was made when the lapse of four or five hundred years did not bring about complete abandonment of the older forms.

In regard to ancient metallurgic operations, it must be borne in mind that the ancients worked largely with mixtures of various ores, by which they obtained alloys at once, and, under the views then generally received, these alloys were regarded as single substances. We may smile at this; but when the nineteenth century began, chemists still regarded caustic soda as an elementary body. It will not be worth while to pursue this subject further, for it will become tedious. Indeed, I fear there has already been too much archæology and too little metallurgy. Before I pass to the lantern illustrations I wish to say a few words concerning the modern views as to the nature of alloys. Students often ask me if alloys are mixtures or compounds. If I pause to reflect before answering the question, the answers that float successively through my mind are: Yes, no, both, neither, I do not know. The fact is, that until we can exactly define what we mean by mixture and combination, we cannot answer the question. We can, however, be sure that several different degrees of association exist in many alloys, and the probability is that most of them contain some of their constituent

metals in a degree of association as close as we could expect in a combination, and this compound is mixed with the mass of the metal that is excess. For example, an alloy of ninety parts of silver and ten of copper probably consists of a compound of the two metals dissolved in—that is, mixed with—silver. It is, moreover, quite evident that the properties of many alloys are materially affected by slight impurities, e. g., by the slight oxidization which almost all metals undergo when melted, and I think is an interesting line of research open to the one who will prepare alloys of absolutely pure ingredients.—*International Dental Journal, Sept. 1897.*

* * *

OXYCHLORID OF ZINC. H. T. King, D.D.S., Fremont, Neb. Read at Nebraska State Dental Society. I wish to call your attention to something formerly much used in dentistry, but which the older men in the profession seem to have gradually ceased to use and of which I fear the younger men have never learned the value. Previous to the introduction of the zinc phosphates, oxychlorid, under that name, or as osteo-plastic or os-artificial, was much used for root filling, pulp capping and temporary filling in live and dead teeth. Our modern plastics withstand the wear or mastication much better than oxychlorid and I can readily see why that material was so quickly displaced as a temporary filling, but I am old-fashioned enough to still think it sometimes indicated in root-canals.

You know the old mummifying idea has been revived and emphasized. Recently devitalized teeth are to have the bulbous portion of pulp removed, a mummifying paste placed over the opening to canal and "the pulp in root-canal can be made to serve as their own root-canal fillings." Simple, isn't it? That disposes of all recently devitalized teeth. There still remain, however, those teeth we are constantly dealing with where the pulp has been long dead and is disorganized. For these we have had promulgated within the year a new method by which "a root-canal, whatever its length, whether straight or tortuous, whether filled with semi-devitalized matter or putrescent pulp and fetid gases, can be disinfected and filled within a period of five minutes." This you know is the new "chemico-metallic method."

I said the idea of mummifying pulps had been revived. If you will read the literature of twenty-five years ago, you will see that it was quite common to have the pulp in a tooth mummify. The

difference being that at that time they did not want mummified pulps and were careful to use some method to avoid bringing about that condition. Listen to some quotations and discussions of twenty years ago: "The failures in preserving the vitality of exposed tooth pulps by oxychlorid of zinc, as formerly applied, have revealed the fact that chlorid of zinc in strong solution dries the pulp tissue and mummifies it. Admitting this a fact, chlorid of zinc would seem to specially recommend itself as an application to root-canals in which a portion of pulp tissue remains."—*Dr. Rehwinkel.*

"I am not an advocate of capping, but when the pulp has given no trouble and is very little exposed I use an oxychlorid cement. If the pulp dies under it, the cement has often the power of mummifying it."—*Dr. Cryer.*

"Oxychlorid of zinc is well adapted for covering pulps. Such fillings seem to impart antiseptic or embalming properties to a devitalized pulp to such a degree as to have obtained for this article an unwarrantable reputation for preserving it alive."—*Dr. S. B. Palmer.*

"Chlorid of zinc has often been introduced into canals to save pulp, and has converted it into a hyalin body that has been a perfect filling, without any change in color of teeth."—*Dr. W. H. Atkinson.*

You will find in reading the history that the mummification of pulps was a condition frequently found, but no one at the time thought it a desirable one. If

> "Cæsar dead and turned to clay
> Stopped a hole to keep the wind away,"

his imperial majesty could do no more harm. On the other hand, Ptolemy II embalmed in the highest style of the art would have been a breeder of pathogenic microorganism within fifty years if he had not been packed away and kept dry. Did you ever think of the fact that mummies are found only in a very dry climate? and do you think that a root-canal will remain dry if the contents is only a dried and shriveled-up pulp? I do not and cannot believe it to be good practice to intentionally leave dead pulp tissue in a tooth.

Admitting that there may be a small amount of tissue that needs mummifying, I hold that there is nothing better for the purpose than chlorid of zinc, and that, combined with the oxid, it makes as good a filling as can be used in root-canals. Do not take my word for this, but note something men who have been thinkers, teachers and successful practitioners have said on the subject:

"I always fill the pulp cavity with osteo-plastic. That is the thing, as I understand it, and there is nothing better. It acts as a disinfectant and is an excellent filling for the root."—*Dr. Clowes.*

"A thin, almost fluid mixture of the oxychlorid of zinc filling is best adapted for this purpose. Although not so fluid as a gutta-percha solution, it has this great advantage, that it will exert its drying and preserving or mummifying effect upon the tissue remaining, incorporating itself therewith and preventing any future putrefactive action."—*Dr. Rehwinkel.*

"For permanently filling the pulp cavity, carry a small pellet of cotton to the extremity of the root, pack solid and complete with oxychlorid of zinc. The oxychlorid, so long as it retains its chlorin, will remain as a constantly present preventive against future development of spore."—*Dr. Rogers.*

"Its application to root-filling has been very satisfactory with many of the best men in the profession. It can be carried to the extreme ends of the roots of teeth. Its antiseptic properties lessen the likelihood of periosteal difficulties, and there is not that incompatibility existing between devitalized teeth filled with this in the root that there seems to be when metal is used."—*Dr. Howard.*

"I am in the habit of filling (roots) always with oxychlorid of zinc, because of the antiseptic character of the chlorid. It prevents further decomposition, so far as I know."—*Dr. Allport.*

Speaking of immediate root-filling, Dr. Ottolengui has said: "I think that a coagulant is here indicated and that the one better than all others is chlorid of zinc. The pulp being removed and the medicament applied, what results? The escharotic property is exerted at the point immediately in contact, and the animal matter is destroyed. But this action is circumscribed. Somewhat deeper a coagulum is found. But there is another property which this agent possesses, and that is the mummification of animal tissue. This, I conceive, is what occurs in the minutest portion of the tubuli."

Some one will ask, what will happen if this material passes through the foramen? It will hurt, just as any escharotic brought into contact with soft tissue will cause momentary pain. This, however, ought to be of short duration. I do not think it well to allow any root-filling to pass much beyond the end, but know of no reason for expecting more trouble from a little oxychlorid of zinc than any other filling material. One more quotation: "Chlo-

Letters.

ST. LOUIS LETTER.

ST. LOUIS, Oct. 21, 1897.

Dear Digest:

At the last regular monthly meeting of the St. Louis Dental Society, the president of our state board of dental examiners gave a very interesting account of the work done by that body since its appointment last July. Law-abiding dentists know too little of the immense amount of work involved in making a good dental law effective, and it is only to be regretted that every dentist in the state did not hear the clear and concise description of the details of the work given to the few members of the St. Louis Dental Society.

By the way, why is it, with our city growing larger and the number of dentists increasing every year, that the attendance at our dental society steadily decreases? Does anyone know? This condition is general, not being peculiar to St. Louis, and deserves attention.

Dr. Keith, of whose illness you were advised in our last letter, is now on the road to recovery, but we are to lose him, as he will go to Asheville to live so soon as he is well enough to travel. We are hoping he may gain health and strength in the mountains and come back to us in the spring. Yours truly,

ST. LOUIS.

PHILADELPHIA LETTER.

PHILADELPHIA, Oct. 12, 1897.

To the Editor of the Dental Digest,

DEAR EDITOR:—As we were like many of those who were trying to get an outing, we did not migrate back to Philadelphia in time to send you a letter for September. Those who went abroad, with the exception of Dr. Bonwill, who went to the World's Congress, have all returned—Drs. E. T. Darby, Matthew Cryer, D. N. McQuillen, and Edward C. Kirk. Dr. H. C. Register's country home has been entirely destroyed by fire. The loss is $25,000.

We regret to learn of the sad accident which resulted in the death of Mrs. J. H. McQuillen, the widow of the late Professor McQuillen. She was on a pleasure trip through New York State with members of her son's family, when the derailing of a car caused her death. Her son, Dr. D. N. McQuillen, was absent in Europe at the time—

rid of zinc locally applied is recognized as among the most efficient agents known for promoting healthy granulations, as in addition to its escharotic properties it appears to exercise a greater influence over the vital action of neighboring parts than other caustics; the separation of its eschar leaving healthy and vigorous granulation. It is equally efficient as an antiseptic and disinfectant. The antiseptic and stimulating action of chlorid of zinc is of a most beneficial character, inducing in many cases better organization of the tissues in the living parts to which it is applied."—*Dr. D. D. Smith.*

Oxychlorid of zinc as met with in the dental depots consists of a watery solution of chlorid of zinc in one bottle and the powder in another. The powder having been prepared for use as filling material, has mixed with the oxid of zinc such materials as powdered slate, flint, feldspar, silex and borax—this to improve the color and give hardness. Particles may be found too coarse to enter a fine canal. For that reason I prefer the oxid alone; mixed with the fluid it gives a dead white and is superior to paper or anything else for lining frail teeth to improve their color. The oxid of zinc can be found at any drug-store, and the fluid may be prepared by placing zinci chloridi ℥i in a flat porcelain or glass dish and allowing it to stand a few days in a damp place. It will take from the atmosphere water enough to deliquesce, or you can make your liquid by fully saturating muriatic acid with metallic zincs, allowing it to stand a day or two uncorked. Either solution should be filtered before being bottled for use. Its strong affinity to water is one of the best points in favor of this material for root-canal fillings. You all know that in the use of gutta-percha the prime requisite is absolute dryness. This I conceive is very difficult to obtain in many canals we find. I feel certain that hot air will not dry them and have never seen a root dryer that was fine enough to go where we are able to put some of the fine bristles we use.

If you attempt to work chloro-percha into a canal that is not dry, the material will not leave your dry broach to adhere to the walls, but will come back. Not so with my material; its affinity for water is greater than the mechanical hold on the broach and it will stay. The only effect moisure in the canal can have is to make the mixture a little thinner.—*Dental Review, Sept. 1897.*

INCREASE OF LIFE.—Mortuary statistics show that during the last twenty-five years the average life of woman has been lengthened eight per cent. The average life of man has also been increased five per cent.

In a letter published in the September number of the DIGEST Dr. Kirk takes exception to our August letter, and this is his chosen paragraph: "No, if the Quaker sore spot still continues to provoke these evidences of reflex disturbance, and the Famous Vegetable Compound has not brought relief, a season of rest and quiet may help, if not the sufferer, at least those who are within reach of his twaddle."

This is the language of the dean of a university, the editor of a dental journal. Where are the ethics of the profession? If this were laid before the profession, would they say this was gentlemanly or within the language of the code? Undoubtedly the editor of the DIGEST was correct when he once stated in an editorial: "Unless the editor (Dr. Kirk) considers that the ethics governing ordinary mortals do not apply to him." QUAKER.

BALTIMORE LETTER.

Dear Digest: BALTIMORE, Oct. 21, 1897.

Our state society came together one evening last week for a quarterly meeting and the occasion was an enjoyable one. The president of the organization in appointing his committees left out the old stagers and named the young and untried men. This seems to have had the effect of encouraging the boys and evidences of enthusiastic interest in the next annual are cropping up on every hand. The regulars are not sore over this apparent slight; on the contrary they enjoy the relief from responsibility, and are watching the youngsters with interest. On the whole the society is in a more vigorous and flourishing condition than ever before, and we predict that the democratic policy of the present administration will strengthen and improve its condition.

A pleasing feature of the last meeting was the presence of men prominent in professional matters who have not heretofore been in attendance. Dr. Montell read a paper on pyorrhea, which was discussed by Drs. Harris, Grady, Keech, Mills and others. The youngsters seemed a little afraid to take hold of the discussion, but who blames them? I should say, perhaps, that no agreement was reached as to cause and no infallible remedy was suggested for the cure of this disease.

By the way, did it ever strike you that if we were to fine every man five dollars who should mention the subjects of pyorrhea or

on shipboard, indeed, on his return. Dr. J. D. Thomas and a few of Dr. Daniel's most intimate friends chartered a tug and met the vessel, and with great thoughtfulness and kindness broke the sad news to him. We extend to him our sympathy in his bereavement.

Again we have heard from Dr. Edward C. Kirk. We will call attention to a few points. If he does not change his language we shall never notice anything he may have to say in the future.

"Quaker" had this in his May letter to the DIGEST—"The *Dental Cosmos* in a recent editorial has offered to the profession its apology for neglect of duty, by saying: 'We were not favored with a copy of the report for publication in this journal, which may in some degree explain the absence of comment upon it on the basis that but a minority of the profession have read it. Certainly it is not lacking in features interesting and important enough to arouse the attention of the most apathetic.'

"While the editor may not have received a copy direct, he evinces that he knows well where it was published—in the DIGEST —and that he has seen it, as he seems to appreciate its value and sarcastically regrets 'that but a minority of the profession has seen it.' The truth of this last statement might be questioned. Why has he not acted in the premises before?

"This position is the more peculiar in the light of the fact that his journal has exclusive control of reporting the proceedings of another association, and for ten months has failed to give to the profession the details of that meeting in which he himself took part, the import of which is of such vital importance to all who hold the fair name of the profession dear to the heart, and yet the *Dental Cosmos* is 'devoted to the interests of the profession.'"

All the above can be answered by stating that it is true or that it is not true, and this is Dr. Kirk's reply: "The pathological condition manifested by his effusion is one which presents an interesting and somewhat complex clinical picture. A study of the symptoms, however, will enable anyone familiar with the disorder to at once recognize it as a case of *megalocephalitis*, that is to say, a chronic case of big-head, complicated with an intercurrent attack of sore-head. It is not, as has been suggested, a condition which would yield to a course of treatment with Lydia Pinkham's Famous Vegetable Compound, for the disease is quite incurable, running a chronic and very irregular course which invariably terminates fatally."

pulpless teeth in dental meetings, and with the sum thus raised pay a competent commission to solve some of the as yet unsolved problems, we would profit by it? Or if we could only make it retroactive, just go back one year, wouldn't that sum be a corker? We could put up a building in Washington and support our commission like nabobs. But then there is a gloomy side to this—we shouldn't have any dental literature, nothing about which we know all to discuss. We should be reduced to the extremity of the tramp in "1492," who deplored that he had "nothing to think but thoughts, nothing to say but words," etc. And then at our dental meetings we'd just have to sit 'round and twist our thumbs and look sad while we waited on that commission. Then possibly the commission would get fond of the life in Washington and delay the report, and we might have to depart in peace without beholding the glory of a new era in pyorrhea. Guess we'll have to stick to the old order of things. Did you yawn? Oh, well, we are training a profession of orators and we shall have to put pebbles in their mouths and make them talk to the waves of the sea.

Dr. Burgess, one of the demonstrators in the Baltimore College of Dental Surgery, was married last evening, a novel feature of the occasion being the attendance of the students of the college (about 250) in a body. The boys forgot to leave the college yell home and polite folks thought they were Indians. We wish the Doctor and his fair bride a long and happy life.

During the past week a graduate of the Ohio Dental College applied to our examining board for permission to practice dentistry in this state. In addition to his diploma he had certificates of registration in five different states, four of them secured for successful examination. He was informed by the board that he would have to pass an examination and in the meantime, if he secured employment which was approved by them, he might be granted a temporary permit to practice. Is there not food for reflection for the citizens of these United States in this action? Here is a young man with a good college record, who locates in the far west, and finding the rigors of the climate too severe for him, he moves over into another state. Still not improving, he works his way through five states till he reaches Maryland, with passports that ought to take him round the world, and is told with imperial dignity that he must stand up in the corner and be a good boy for a stated season. In the

meantime if he should incidentally run out of funds, or even starve to death, while educational institutions, state governments, etc., attest that he is equipped to practice his profession, it is no matter; he must keep out of our back yard.

Your correspondent recalls an incident which occurred at Old Point last summer. A student who graduated well at a Baltimore school went home to Virginia to await an opportunity to take the state board examination. In the meantime, a professional friend being taken sick, he was called in and as an act of charity helped his sick friend out. This assistance lasted but a few weeks; but a rival in the same town complained to the different members of the board, and when examination-day came round he was promptly thrown and denounced as an outlaw. A member of the board said to one who appealed for the young man, that it was useless for him to deny that he had been practicing since leaving college, as it was plain to everyone that he handled his instruments and materials as dextrously as an old operator. Thus his very proficiency damned him. Is it any wonder that in the State of Virginia more than a dozen special bills passed the legislature, granting the beneficiaries (not all graduates) the right to practice dentistry without being subject to the whims of the examiners? *The way to make a law odious is to enforce it odiously.* Go easy, brothers in Maryland.

Yours always, ORIOLE.

NEW YORK LETTER.

NEW YORK, Oct. 16, 1897.

To the Editor of the Digest,

MR. EDITOR:—Dr. Schwarz's reference to the artistic in connection with regulating the anterior teeth has been emphasized in our mind during the month by watching the demonstration of cases before and after by models, and in one case we saw the whole operation, and much pleasure expressed by the patient with the result. These models will ere long be illustrated in our journals. No controversy can be had over such demonstrations. Talk has become cheap, this is the age for demonstrated ability, and we think it will make societies more attractive. We predict that in the future there will be a larger field of work along the line of correcting irregularities in the adult teeth. Dr. Farrar's papers have been

advocates for this work. The present methods will avoid much of the agonizing crucifixion of former operations. Some day we shall find that the practice of dentistry is not the cruel inquisition that is now so commonly charged against it.

The monthly meeting of the Central Dental Association of Northern New Jersey occurred on the 17th, and an excellent paper was read by Dr. J. Morris Leonard, of Connecticut, on which of the two national college associations has accomplished the most good for the elevation of the dental profession. A full program of the November meeting and the titles of some papers to be read during the winter were also given.

At the October meeting of the New York Odontological Society, Dr. Henry N. Dodge, of Morristown, N. J., reported an interesting case in practice—"Reciprocating Tooth Movement; A Study With a Sequel," which was illustrated by photographs. The paper of the evening was "Fractures of the Maxillæ," by Faneuil D. Weisse, the new dean of the New York College of Dentistry. Dr. M. N. Nagle demonstrated a new method of making the interdental splint.

The New York *Herald* of a recent date reports that Dr. Evans will found a very large dental college in Philadelphia. He has for many years talked of his purposes in this regard, and during his visit in 1876 conferred with many. The opinion has often been expressed, that could he commence this movement while living it would be a source of much gratification to him to see the success of his project. There are so many slips in the intended disposal of property, such as in the Tilden estate, where a library was planned for, and many others could be noted. All that can be hoped, from the large ability Dr. Evans has in finance, is, that ultimately our much handicapped profession will have the advantage of some of the thirty-five millions reported to be possessed by him.

Dr. Daboll and wife, of Paris, sailed for home this month.

We note statements of doubt regarding the use of wood for canal fillings. It smacks a little of egotism, though it probably is not so intended. Wood is not perfection, but it is very practical. Why not show a few methods in this artistic regulating by silk? It would tell its own story to many who could also make it successful.

The latest scientific discovery bids fair to outshine that of the X-ray. Dr. Elmer Gates, of Washington, D. C., has invented a microscope which exceeds the power of the best present microscope

as much as the latter exceeds the power of the human eye. It will magnify an article three million times its diameter, and the inventor believes he will be able through it to photograph images one hundred million times the diameter of the original object. This of course opens up a new world of scientific investigation, and now the study of the structure of the most infinitesimal cells may be successfully prosecuted. Dr. Gates says:

"We may now hope to learn something about the living units of which a cell is composed, and to study minutely the effects of the psychologic activity of cells upon their own anatomy. Cells, as I have often taught, have minds, because they can feel and adapt acts to ends. They differ from dead organic matter because they can feel stimuli and respond. Now, only mind can feel and respond adaptively. Hence cellular life is mind, vitality is mentality, and physiology is psychology. Cells are, therefore, the psychologic units of the body. It follows that the phenomena of metabolism are mental phenomena, or rather the results of mentation. The processes of health and disease are consequently processes of mentation. Mentation in its simplest form is found in cells, and it is in the study of the effects of medicines, forces and foods upon the psychologic activities of cells that we may expect to find the environmental part of the secret of health and disease, and it is in the study of the effects of mental activities upon cells that we may expect to find the subjective secret of health and disease."

We are each composed of millions of cells, and Dr. Gates says that each of these cells has a certain amount of mind. He has discovered that microbes can feel. He took one of the lowest living organisms and laid it on a piece of glass. He then sent a strong ray of light so that it fell upon the organism, and within a few seconds it began to move, showing that it must have felt the light and wanted to get away from it. He has discovered, he says, that all animals in using their minds act to a certain extent upon all other animals. For instance, he found that when he put the ray of light on such an organism it required two seconds before it was affected by it. He again performed the same experiment with several men in the room, all of whom were thinking intently on a certain problem, and found that the mind waves, as they might be called, had so stimulated the little organism that it moved in half a second. Such mental action goes from using waves, according to Dr. Gates, with a velocity of 186,000 miles a second, while the movement of feeling along the nerves of your body toward the brain is only ten feet a second, so that mentally you are nearer the Emperor of China than you are to your big toe.

Dr. Gates has also performed some wonderful experiments in mind building, and is firmly convinced that our brains can be added to and built up. He says:

"I have tested it in many ways. I have a baby, for instance, who will discriminate more than a hundred thousand different shades of color, and who has been specially trained in seeing, feeling and in other ways. I believe that we have eight senses, you know, instead of five. We see, we hear, we smell, we taste, we touch. We also have a sense of cold and a sense of heat, and also a sense of muscular action. All of these senses are based upon thought. They are controlled by the mind. The use of them acts upon the mind. Every time you use one of them a certain set of cells in the brain is changed, and by their use you can build up a new set of brain cells. Unless all of these senses are used your brain will be unevenly developed, and some parts of it will not be developed at all. In training my child I tried to make him use all of his senses. I taught him the sense of heat and cold by the use of hot and cold baths, graduated from cool to warm. I also used rubber gloves, connected with the water supply, and as a result of this I believe his brain will be stored with memories of all the degrees of heat and cold he is likely to have in life, and I think he will be able to endure the differences of temperature. He is now 2½ years old, and he has never been sick but once, and then he had the measles.

I have boxes of blocks with which I taught him the different geometrical shapes, and whistles with which I taught him sound, so that he can now distinguish between scores of different pitches At ten months he could distinguish fifty different tones and thirty different calls. My experiments in teaching never last more than five minutes at a time, and the child really likes them. A child who had been trained for six weeks after birth in the excessive use of the heat and cold senses was found, after dying of scarlet fever, to have in the temperature areas of the brain more than twenty-four times the average number of cells."

Dr. Bonwill has returned from Moscow, where he received much merited attention, and in other foreign cities as well.

Dr. George Weld gave a very instructive paper to the First District Society in October, showing the easy access to pulp-canals, by diagrams and drawings. This is an age of illustration. Dr. Weld has had no little criticism concerning his treatment of pulp-canals, but in his last paper there is an able answer to his critics.

We have been asked if we did not make a mistake in stating in our last letter that Dr. Tenison had died, but there was no mistake; we have verified the fact.

We have listened to the reading of a paper prepared for the October meeting of the Vermont State Society, entitled "Chronic Alveolitis." No, the title was the old one, "Pyorrhea," but we think

the first is the better. We recently met a lady of more than ordinary good sense, yet she had a mouthful of gold crowns, mostly on the anterior teeth, and put there within the last three months. We were tempted to tell her how utterly out of all good taste it was, but we remembered that there was a time when we were guilty of the same practice. Then our ignorance was excusable, but now repentance is in order.

Cordially, NEW YORK.

DENTAL SOCIETY METHODS.

MANATEE, Fla., Oct. 8, 1897.

To the Editor of the Digest,

DEAR DOCTOR:—I have been reading for over thirty years the reports of meetings of dental societies in which nothing is ever given except a list of the officers elected. These questions, therefore, seem reasonable—Was this all that these societies met for? If such elections were not considered the most important things accomplished, why not give the other results of the meetings? If anything was done which made the names of their officers of enough importance to be heralded over the United States each year, why not let us know what it was? Does it not seem plausible, that if they accomplished anything but to elect one another to office they would wish to have credit for such action? What does the profession care who are the officers of societies that never do anything to advance its interests? Instead of its being an honor to be reported in such a way, it looks like unqualified quackery.

Respectfully, W. E. DRISCOLL.

ATTEMPTED SUICIDE OF DR. D. R. JENNINGS.—As we go to press we learn that Dr. D. R. Jennings, a dentist in Cleveland, O., shot himself Oct. 28, and will probably die. It is supposed that overindulgence in cocain unbalanced his mind.

VACCINATION AGAINST THRUSH.—Mr. Roger, in the *Societe de Biologie*, says that an injection of a cubic centimetre of a culture of oidium albicans into the veins of a rabbit engenders a disease which kills the animal in five or six hours. If the injection is given in very small doses the animal becomes immune and can endure a dose double the quantity of the usually fatal dose. The serum of the animal presents qualities analogous to that of animals vaccinated against bacterial maladies. If thrush is injected into normal serum, at the end of twenty-four hours the fluid becomes flocculent and thick, while the serum of the vaccinated animal remains clear.

The Dental Digest.

PUBLISHED THE

TWENTY-EIGHTH DAY OF EVERY MONTH.

Editorial.

THIS MONTH'S ORIGINAL ARTICLES.

In this issue are several papers to which we would call attention. The one by Dr. Fletcher on "Crown Work" is especially worthy of consideration, and the suggestions which he makes are sound and should be carefully studied.

The "Discussion on Cataphoresis," about which subject too much can not be said and thought, and the paper on "Children's Teeth," by Dr. Kerr, especially that part relating to the management of children, will both be found to contain many new and valuable points.

The letter from Dr. Driscoll on "Dental Society Methods," while rather radical in some of its statements, contains some truth, and we presume will call forth both favorable and adverse criticism; while the wonderful discovery by Dr. Gates, briefly described in the New York letter, will, we feel sure, be of interest to all our readers.

DENTAL EDUCATION.

The Faculties' and Examiners' Associations are still a prolific source of contention, and we hope that out of all the discussion and complaint much needed reforms will eventually come.

It does not seem altogether settled whether the Faculties' Association took a backward step at Old Point Comfort or not. According to some the dissension arises from the fact that the action taken is not understood, while others positively assert that the meeting was controlled by a majority of schools which did not want a high standard. Still again we are informed that the Examiners' Association is to be blamed for the action. It is to be hoped that all those interested will come to the front and give their opinions and their side of the question. Our pages are open to a full and free discussion of this most important subject, and the future standing of our profession depends upon a correct solution of what just now seems to us a much unsettled condition of affairs.

THE NATIONAL DENTAL ASSOCIATION, RECENTLY FORMED AT OLD POINT COMFORT.

We are led to a consideration of the merits and demerits of this new organization since reading the attack made upon its plans by two dental journals, editorially—the *International* two months ago, and the *Practitioner and Advertiser* for October also delivers a tirade against the almost unanimous action taken at Old Point.

It so happens that the editors of both these journals were on the committee that attempted to revise the constitution and by-laws of the American Dental Association, and as the editor of the *Practitioner* says, "That committee labored long and earnestly, and finally presented a report which embodied many excellent suggestions;" and farther on he says, "That report was shelved and finally buried."

We have no doubt that the committee worked hard in the endeavor to get up a constitution and set of by-laws, and now feel that they wasted their energies. Well, so they did, but the reason was not that through scheming and other reasons given by these editors the report was not acted upon or adopted. The real trouble lay in the fact that the gentlemen constituting that committee were trying to do something for which they were entirely unqualified, as was proven to all except the committee by the report itself, and the kindest thing to do was to shelve it. Both gentlemen were men of ability, but not along the line of getting up constitutions and by-laws for the government of societies.

Generally those who grumble and find fault with the laws governing societies are the ones who know the least about what such rules should be. The constitution and by-laws of the American Dental Association were about as correct and suitable for the government of that body as they could be. They were revised and corrected from time to time as the necessity of the case required, and the committee that got up the report which was adopted for the National Association was wise in following closely the constitution, by-laws and resolutions of the American Association. The American was not a failure by any manner of means, having accomplished a great work for the profession, and while it was not so great a success as might have been desired, the fault did not lie in the plan of organization.

One thing which has always seemed a detriment to us was the time of holding these meetings, and we are not sure that the new

organization is altogether right in selecting only a month later as a meeting time. However, this can probably be adjusted for the best and to the satisfaction of all in the course of time.

It is not our intention, however, to discuss the favorable and unfavorable features of the new organization at this time. We merely wish to insist that it was wise to follow and adopt such plans of government as time and experience had proven to be a success. When would-be organizers ignore the existing forms of constitutions and by-laws, they are treading on dangerous ground.

Notices.

PROGRAM OF THE ROCHESTER DENTAL SOCIETY.

1897.—October 19—Dr. W. W. Belcher, essayist; subject, "The Laboratory." November 16—Dr. F. J. Woodworth, essayist; subject, "Advice to Patients." December 21—Dr. C. H. Nicholson, essayist; subject, "Temperament as Indicated by the Teeth." 1898.—January 18—Dr. W. H. Barr, essayist; subject, "New Remedies and Methods." February 15—Dr. R. H. Hofheinz, essayist; subject, "Cements and Gutta-Percha." March 15—Dr. J. E. Line, essayist; subject, "Pathological Changes in the Dental Pulp." April 19—Dr. J. W. Cowan, essayist; subject, "Gold and Alloys." May 17—Dr. F. A. Greene, essayist; subject, "Fracture of the Superior and Inferior Maxilla." June 18—Dr. C. F. Howell, essayist; subject, "The Year's Advancement in Dentistry."

The place of meeting is to be held in alphabetical order of members. Two members at each meeting are to head the discussion on the paper of the evening A member at each meeting is to head the discussion under "Incidents of Office Practice." A question box is to be started, open to all desiring information. The essayist is required to send his paper to the members discussing it at least one week in advance of meeting. The executive committee expect to complete arrangements for two interesting special meetings during this winter's session.

MEMBERS.

Dr. W. H. Barr,	Dr. B. S. Hert.	Dr. L. Requa,
Dr. J. H. Beebee,	Dr. R. F. Hofheinz,	Dr. F. M. Rood,
Dr. W. W. Belcher,	Dr. H. N. Holmes,	Dr. B. G. Saunders,
Dr. J. W. Cowan,	Dr. C. T. Howard,	Dr. F. L. Sibley,
Dr. I. C. Edington,	Dr. C. F. Howell,	Dr. P. H. Smith,
Dr. R. Erler,	Dr. F. H. Lee,	Dr. W. W. Smith,
Dr. F. French,	Dr. J. E. Line,	Dr. D. H. Waugh,
Dr. J. S. Furner,	Dr. H. S. Miller,	Dr. W. A. White,
Dr. L. H. Gilbert,	Dr. C. H. Nicholson,	Dr. W. A. Windell,
Dr. F. A. Greene,	Dr. J. Requa.	Dr. F. J. Woodworth.

These papers will be published in the DIGEST as soon as read.

RECENT PATENTS RELATING TO DENTISTRY.

590,214. Dental furnace, William Dall, Glasgow, Scotland, assignor to Dental Manufacturing Company, Ltd., London, England.

590,460. Dental appliance, Charles F. C. Mehlig, New York, N. Y.

590,442. Device for forming seamless tooth crowns, Lansing S. Skiff, Salem, Ore., assignor to J. F. Twist, San Francisco, Cal.

590,246. Dental engine, Gustaf Vally, Johnstown, Pa.

590,799. Manufacture of metallic tooth crowns, Louis L. White assignor to L. L. White Tooth Crown Company, San Francisco, Cal.

27,690. Design, tooth brush holder, Alfred A Waite, Wilmington, Del.

591,338. Dental chin-rest, Frank F. Fortney and T. H. Stevens, Ravenna, Ohio, said Fortney assignor to said Stevens.

591,352. Apparatus for disinfecting and deodorizing purposes, Alexander G. Hunter, Toronto Junction, Canada.

591,499. Dental mallet, Percy Russell, assignor of one-half to I. S. Russell, New Market, Md.

TRADE MARKS.

30,565. Artificial gum used in dentistry, India Rubber Comb Company, New York, N. Y.

30,672. Tooth washes, Opal Cream Company, Bloomington, Ill.

(List furnished by John A. Saul, Patent Attorney, Washington, D. C.)

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

(*Continued from page 604*)

SATURDAY, JULY 31, 1897—MORNING SESSION.

Vice-President Noble called the meeting to order, and the secretary called the roll of states and read the minutes of the last previous meeting.

The secretary reported that he had just received the credentials of Dr. J. A. Libbey, of Pennsylvania.

Dr. Klump: Before the minutes are adopted would it not be well to have those amendments in full?

Dr. Donnally: I left yesterday before the work was fully completed and do I understand that the modification of the rule was made complete and passed upon by this association yesterday afternoon—finally passed upon?

The Chairman: They are subject to amendment at any time.

Dr. Meeker: They were not adopted as a whole as they were not finished.

Dr Brown: I believe the secretary has received a communication from the state society of Pennsylvania which it might be well to have read now.

The secretary then read a communication from the Pennsylvania State Dental Society.

Dr. Meeker: I did not read this before because it came from a dental society, and I did not think it had anything to do with our association, but as Dr. Brown called for it I read it.

Dr. Donnally: How can the dental society of Pennsylvania instruct its board of examiners? They are instructed to take cognizance of certain things and to regard certain things done by the society. We have never tried to force a board to act contrary in any respect to the laws of its own state. Such things as that grow out of a misapprehension of the purpose and policy of this organization.

Dr. Brown: I called for the reading of that paper because it seemed to show the intent in certain quarters to place this organization in a wrong

light, and it is right in line with certain editorials we are all familiar with. I think the time for stamping out this kind of business has come. The idea of a state society instructing its board of examiners, a state commission, as to an action which they are certainly capable of taking care of! I think it is a—well, you may say that it is an impertinence to that state board, and a board which is a component part of this organization, and therefore it reflects on us. I do not think it is a proper act of a state society to interfere with a state board which is part of the national organization.

The Chairman: I have heard the statements so far. If any action is proposed you can speak upon it. Is there any action proposed?

Dr. Klump: I was going to say, in explanation of this, that the intention of it was to state that as the law stands and as the rules were, the State of Pennsylvania could not be represented in this national board of dental examiners unless those rules were modified, and I think the whole intention of that resolution was simply to call attention to that fact, and to state that we would have to withdraw unless the rules were modified to a certain extent. The state board of Pennsylvania is not yet appointed under the new law and we do not know who they will be, but there are twelve men recommended by the state society, six of whom are to be appointed by the governor.

Dr. Donnally: I would like to ask Dr. Klump before he sits down if there is anything peculiar in the laws of Pennsylvania which gives a state society a right to instruct its board of examiners, and if the board is under the direction of a state society in its general course and policy, or under the influence of this organization. This organization not pretending in any way to dictate its course and the administration of the law, but the general policy being to bring about harmony in methods, and in carrying out the general purposes of this organization, which it is not necessary to repeat here.

Dr. Klump: I think it is the general impression and idea of the state society of Pennsylvania that they would like to be represented in this board, and that they thought a great deal of good could be done by having their representative here, but as the law reads specifically, and in some instances was different from the rules and regulations, they could not retain their membership unless those rules were modified. So far as the state board has been concerned heretofore I think the state society has had no control over them; neither has the action of the dental examiners had any great influence. The law is very specific as to what examination they are to make. As I understand the law—of course we are not any of us very familiar with it, as it has just recently been passed—the board itself under the new law is specifically instructed as to what persons are eligible for examination before that board and what are not, and it cannot be delegated to any other society or to any other body of men, excepting the state board themselves. I think it has been the desire of the state society and the state board to retain membership here, and the principal desire was to have the rule so modified that they could retain membership.

Dr. Green: Dr. Klump has very clearly stated the position of the Pennsylvania State Dental Examining Board as connected with the state dental society. All that the society does, or has hitherto done, is to name and elect the members of the board. After that the society claims nothing whatever to do with the board as to its action. That is governed and controlled entirely by state laws, three of which we have had in the state. There has been a very great desire in our board to have a representative in this association, and it has been represented here for a great many years. They still, as Dr. Klump has said, feel the same way and greatly desire it, and I felt after the modification of these rules had taken place yesterday, and the changes were about to be made, that I would hardly feel justified in handing in the resolution; but as it came from the secretary of the state society it was proper that it should be presented here and read. But it did seem to me that we have now passed beyond the necessity of action in that case. We greatly desire, and I want to impress it strongly upon this body, that the Pennsyl

vania State Dental Examining Board desire to work in unity, so far as they can, as they have heretofore done with this association.

Dr. Libbey: I believe the president ruled this out of order, as there was no motion on the subject, but as he is allowing discussion, and as the question that was asked has not been entirely answered, I want to say that it was I who presented these resolutions to the state society, and I was surprised when Dr. Meeker read these resolutions as having been sent to him, because they were sent to the delegates who came here and I expected them to present them. I do not feel that it is necessary to make any further explanation or talk any more on this subject, as I understand the disabilities have been removed. But had they stood I should have claimed the right of the Pennsylvania State Society to express its opinion on that matter, and, I should have given my reason very clearly; but I do not see any use of spending any more time on this now. I guess we are in such shape that we can stay with you.

Dr. Donnally: It simply says in the resolution that the Pennsylvania Society has given its board certain instructions, and if there is any authority for the instruction of that board by the state society we do not know of it, and I do not think that the board itself has considered the matter fully when it allows any organization to give it specific instructions in regard to a matter, and especially a matter that could be settled by its own representatives to this body.

Dr Moore: I move we go on with the regular business. We have talked enough about Pennsylvania. I don't know anything about the internal affairs of Pennsylvania, but I do know that in Virginia no society can interfere with or instruct a state board. There are state officers appointed by the state executive power in Pennsylvania and in every other state, and no society has any right to instruct them at all, or interfere with them in any way. They will take advice perhaps, but they will not be instructed.

Dr. Meeker: I move we proceed with the regular order of business, the continuation of the report of the committee on colleges.

The President (in the chair): We will now hear from Dr. Faught.

Dr. Faught then read the latter portion of the report of the committee of colleges, which appears upon the record of the meeting of Friday morning, July 30th.

Dr. Noble: Does it require a motion to adopt that suggestion?

Dr. Faught: The idea is, I believe, to go through the report of the committee on colleges and adopt or reject these suggestions, because they are made from the experience of tests, and we must formulate some way by which we may act in the future. We have issued the list this year without any dates being appended, and in my correspondence I found that questions constantly come up as to when this college or the other was recognized. These questions which I have propounded here have been written to me time and again during the past year, and I have had to act in a conservative way, letting each board, as I told you, act for themselves. These questions will arise again in the future, and it is simply so that your committee on colleges shall be instructed so that it may issue a list by the authority of this association, with the dates appended at which the institution was placed on the list. That will then give the board the desired information and they can act for themselves.

It was moved and seconded that the recommendation of the committee on colleges, that the date of recognition of any institution be placed upon the list issued by this association, and that the question of the eligibility of the candidate for registration or for examination be left for each state board to determine for itself, be adopted. A vote being taken the motion was carried.

Dr. Faught: I believe that covers all of the suggestions contained in the report. The rest of the report consists of the discussion of the question of preliminary education as seen by your committee, so as to bring it to a

point. That of course is embodied in the rules now in the hands of the conference committee. I might state right here that a special and specific report of your committee on colleges regarding colleges applying for recognition cannot yet be presented. We have not finished it and we are in a position of not being able to finish until after the final report of the committee on conference with the faculties. After that committee has made its final report and you have adopted the rules as a whole, then your committee on colleges will be in a position to determine the applications which are now pending, and not until then. So that is all we have at the present time.

Dr. Chappell: The committee on conference last night directed that the secretary of the conference committee secure and have copied in duplicate for their use the resolution as adopted by this association; so that they can know what they are to consider, and I have been engaged in preparing the rules as adopted yesterday. Now the question is, Do you wish to have these read before you so as to know exactly what we did yesterday, so that we can then give them to the typewriter for manifold copies? If it is your pleasure to have them read, so that if any corrections are necessary they can be made before the copy goes to the typewriter, I shall be happy to read them.

Dr. Meeker: I think they ought to be read.

The President: If there is no objection they will be read.

Dr. Chappell (reading): Rules of the National Association of Dental Examiners, adopted July 30, 1897. Rule 1. Colleges desiring recognition by the National Association of Dental Examiners shall make application for such recognition through the committee on colleges on blanks provided for that purpose.

Rule 2. The preliminary requirements prescribed by the National Association of Dental Faculties, as adopted at Saratoga in 1896, shall be the standard accepted and required by the National Association of Dental Examiners.

Rule 3. The statements set forth in the application of any college for recognition shall be verified, after investigation, by the board of dental examiners of the state in which the college is located, or by other persons designated by the National Association of Dental Examiners, in case no such state board exists; and the recommendation of such board shall be essential to recognition.

Rule 4. The state boards in connection with this association are hereby required to become informed of the character of the dental colleges located in their respective states, as to their equipment, facilities and methods of teaching, and shall report annually to this association wherein they fail to comply with these requirements.

Rule 5. Attendance of students upon three full courses of not less than six months duration, each in separate years, with three months' practical instruction intervening between the courses, shall be required before final examination for graduation.

Rule 6. Each dental college to be on the list of recognized colleges must have a teaching faculty composed of at least six individuals, and must teach the following branches: Operative Dentistry, Dental Pathology, Dental Prosthetics, and Oral Surgery; also the six branches, Anatomy, Physiology, General Pathology (fundamentals), Materia Medica, Therapeutics, and General Surgery. The students must also be taught the subjects of Chemistry and Bacteriology in laboratories adapted to the purpose and under suitable instructors. Such college must possess, in addition to suitable lecture rooms, a well-appointed dental infirmary and a general prosthetic laboratory; must also furnish in this way systematic instruction to its students.

Rule 7. Final action shall not be taken on the application of any college until such college has been admitted to membership in the National Association of Dental Faculties.

Rule 8 These rules and conditions shall apply to all colleges, including those now on the recognized list, as well as those making application for such recognition.

Note A. We consider it inadvisable for a member of an examining board to be connected with a dental college in any capacity whatever.

Note B. We recommend that each college on the list of recognized colleges state in its annual announcement that it complies with the rules and conditions of the National Association of Dental Examiners.

Dr. Moore: I wish to call attention to a clause in one of these rules, and that is in regard to the three months instruction between the college sessions. That will give a great deal of trouble—certainly in our state. The most trouble that we have in enforcing our law is to keep students from practicing during college vacations—you don't know as much about our affairs as the rest of us from Virginia do—and we have had a great deal of trouble for some years in getting any law at all, and in the meantime Virginia became a sort of Botany Bay for men driven out of other states. We have a large number of men who are not competent to practice dentistry, and it has been very hard for us to control them. Dentists will hire these young men to work for them during the college vacation, and in some cases they have fitted up offices and put them to work there during vacation, paying them a salary, or they have put them to work and made what profit they could and that gives us more trouble than all the other violations of the law put together; all the prosecutions that we have had have arisen from that one thing. I have had a number of cases already reported to me this summer of dentists who had young men working for them in their offices. They worked for the patients and the principal collected the money for the work that they did and paid these young men something for their time and services. That rule makes it obligatory upon the colleges to see that these young men are practicing somewhere. In our state we have no law regulating students. I am quite familiar with the New York law and with some others, and the New York law requires the registration of every student. Every student has to be accounted for, so that the board has control of all the students; but we have no control over them whatever. If that rule is permitted to stand as it is, and it is enforced, it will give us much trouble in Virginia. The faculty of the University College in Richmond have a rule that if any student in that college violates any state dental law he will be debarred from returning to college; they will not receive him again.

Dr. Brown: That is a rule of the Faculties' Association.

Dr. Moore: That is the rule of the institution, that they will expel him, and you know the rule of the Faculties is that a man expelled from one college cannot go to another. If I should report to that college that one of their students was violating the law they would at once expel him and report to the other colleges that he had been expelled.

The President: Just one moment; there is no motion before the house. Do you wish to have that rule reconsidered? If so, a motion to reconsider would be in order.

Dr. Moore: Have they already been adopted?

The President: Yes.

Dr. Noble: Is not this a matter for the state itself under its own laws?

Dr. Moore: I did not make any motion, but I will if the house thinks it better. But in regard to what Dr. Noble said, this is a matter for the guidance of the colleges. We require the colleges to see that their men get this education. They cannot get it in Virginia because our state law does not give us the right to exercise supervision over the students, and I think a great many other states are in the same position.

Dr. Noble: That is clearly within the states. There seems to be a misapprehension that this association was going to try and control the state. That is right in your own state and we have nothing to do with it.

Dr. Moore: Yes, but our college will say, "We are bound by this action to see that these young men are getting the education through the summer season." How are they to get it?

Dr. Chappell: We have adopted a suggestion from the committee on col-

leges that each state shall be governed by its own law, which seems to cover that, and consequently it is taken out. We ought to have a modification of the rule we have just adopted so as to go along with these as rule 9, and that will make the whole matter straight.

Dr. Donnally: I wish to call the attention of the association to rule 1, which requires colleges which desire the recognition of this association to make application on blanks provided for that purpose. Rule 8 says, "These rules and conditions shall apply to all colleges, including those now on the recognized list, as well as those making application for such recognition." That is a little bit inconsistent. If this rule 1 applies to the colleges now on the list, colleges must come in and make application to be put on the list before we have any list; it cuts off every college from a place on the list of colleges when we apply the rules. You must take the two together in order to see the effect: "Colleges desiring recognition by the National Association of Dental Examiners shall make application for such recognition," and rule 8 says that these rules apply to colleges that are now on the list. That is the plain language of the rule and it is a question for you to determine whether that is the intention or purpose of this organization, or whether we shall only revise the list as conditions require. I do not like to insist upon a point which I have called to the attention of the association before, but if the discussion of these things were to go on—Dr. Faught gives us the benefit of all the information he has, then the joint committee go ahead and make such rules by the combined action of the two bodies, and make it much more binding on the Faculties' Association, and we will get a grip on them that we could not possibly have by this committee giving these rules to us as a kind of instruction or guide. If we are free and untrammeled, as this committee from the Association of Faculties is free and untrammeled, and the two committees acting together jointly make rules, we shall have the Faculties bound by that to a greater extent than if it comes from this organization as a proposition and is merely accepted by them. The moral force and influence of the joint action of the two bodies acting together would be much more binding, and would demand respect of a great number in the profession. Teachers and even editors would be inclined to have some respect for it and the whole thing would have the force and effect of a declaration of what is right as to that organization and this by all concerned. I think, gentlemen, you ought to consider that point. The Faculties would not for a moment take up this matter and pass any regulation or rule while this subject is in the hands of a committee, and I do not think that we ought to do it. So far as the committee on colleges is concerned we might instruct that committee to take these rules and finish their report under them, but simply for their action for the present; let them take these rules and hold them as their guide to finish up their work of the year and leave the balance of the matter in the hands of a joint committee, for you are in effect instructing the conferees on one side, while it is a parliamentary rule that the conferees on neither side should be instructed. For instance, compare it to the House or the Senate: if the Senate instructed its committee it would be ruled out of order; it was done in the tariff bill a few weeks ago. No instructions should be given, the proprieties of the matter as well as policy suggest that it ought not to be done.

The President: Do I understand that you wish to hold this and not adopt it as a rule for the time being?

Dr. Donnally: My suggestion is that it should not take the form or nature of instructions to the committee. It should not be offered to the committee as ground for contention with the committee of the faculties It should not have any status that would have any bearing on the action of this committee, further than such discussion as gives to the committee information of the general trend of feeling and the general views of this organization. But it might with propriety be given to the committee on colleges as a rule for finishing up the work of the year.

Dr. Chappell: By your unanimous consent we will have the manuscript changed a little so that it will read, "Colleges desiring recognition by the National Association of Dental Examiners, which are not now on the recognized list, shall make application for such recognition through the committee on colleges on blanks provided for that purpose." We have added just the words, "which are not now on the recognized list."

Dr. Brown: If I understand Dr. Donnally, he wants, in other words, all the work of yesterday afternoon thrown out.

Dr. Donnally: No, indeed.

Dr. Brown: Then you want the committee on colleges to make a report on a set of rules that do not exist?

Dr. Donnally: No, you wholly misunderstand me. I thought I made that plain to you in private conversation. The idea is that we can give the committee on colleges these rules as their guide in finishing their work, but in no sense are they to be in the nature of instructions to the joint committee now in session.

Dr. Brown: What is the use of adopting two or three sets of rules in one session? How are we going to make a report and admit a whole lot of colleges under a set of rules that we propose to change a few minutes afterwards? We cannot consent to that.

Dr. Donnally: I understood that the committee on colleges said that it would be necessary to have some instructions or some modification in regard to the rules in order that they might finish up the work. That is what I understood.

Dr. Brown: I think it very desirable that members of this association who propose to discuss questions should remain in the room all of the time. If Dr. Donnally had been here during the discussion yesterday afternoon he would have understood this matter. We cannot make a report under the old rules with rule 8 remaining. That was decided yesterday. We have no new rules to work under because they have not been adopted as a whole, and Dr. Donnally does not want them adopted as a whole, neither do we until this conference committee reports. Now what are we going to report upon? I do not think that we are taking an arrogant position in codifying these rules and getting them in shape so that our committee can use them to show the spirit of this association in meeting the faculties, showing that we want to come to their ideas in this matter and smooth things over. I do not think that that shows arrogance in our board. Neither do I think that we should have these committees formulate a set of rules that are going to bind us. I do not think the faculties committee should take part in making our rules. I think it would be a great deal more dignified to have them accept our rules, or perhaps suggest changes in them so that we could meet them on the point; but I do not see anything objectionable in going to them with this new set of rules.

Dr. Noble: That is something to go by.

Dr. Barlow: I cannot see what weight the argument of Dr. Donnally has. The committee of conference has had its instructions from this board and I do not see why it should not follow them and make its report.

Dr. Lowry: It occurs to me that perhaps the gentleman on my left (Dr. Donnally) has the idea that this conference committee can get more than even these rules provide for—get more concessions. He suggested that yesterday, and he does not want to be restricted to these rules if he can get a more liberal concession from the Association of Faculties than these rules ask for. He feels that he ought to be at liberty to do that.

Dr. Brown: He is.

Dr. Lowry: If these rules are taken before the Association of Faculties they will know how liberal the Association of Examiners is and possibly it would be more difficult to get concessions from them, even as much of a concession as the board indicated yesterday. Let us ask for a little more than we want and we will probably get what we want, and that is his idea, is it not? Is not that your idea?

Dr. Donnally: I want them to make the concessions, to appeal for them in argument as to what is right, and get their own consent to it.

Dr. Lowry: You don't want to submit these rules to a committee?

Dr. Donnally: The question was asked last night if this conference committee is to make rules, and we were told to go ahead and make rules. What is the use of this committee going ahead to get something of that kind under the authority of both organizations when one side is doing it by its own authority?

Dr. Lowry: I agree with you somewhat on that point, because if we submit these rules to that committee it will be somewhat in the form of a demand, if we have made these rules prior to any conference whatever. This set of rules ought to simply be a guide to our committee and a line to which to work, and I do not think it would be a very wise idea to open out all our business to the other committee and show them just what we have done, and give them the impression that we demand that.

Dr. Donnally: Do you mean open up the rules, or the subjects of the rules? We would open up the subject of the rules, but not these rules.

Dr. Lowry: I say I don't think it would be wise to open these rules to their committee as a whole and show them what action we have taken and get them to come to it. I don't think we could get as good terms with them that way as by going about it the other way. The question now is how we can best effect a compromise with the Association of Faculties.

Dr. Moore: I am perfectly satisfied to leave it in the hands of the conference committee. I am willing to trust to Dr. Donnally and that committee. When they come together, if there is some little direction required let them come back and state it. That is all there is to it.

Dr. Clements: I would like to ask you if we have got any rules now as an organization?

Dr. Meeker: We have.

Dr. Clements: They have not been adopted; they have been revised and as an organization it seems to me we must have some basis to work on.

Dr. Meeker: They have been adopted.

Dr. Donnally: I propose to make a motion, but I want to state before I do so, that it has been shown all around that we are without a perfect organization, and I have been anxious to see some gentleman—I hoped Dr. Faught would do that—make a motion that these rules should define the different committees and their duties I have abstained from making the motion because I did not want to be on the committee, having too many things to do, and because I am not in a position to work. I thought perhaps if an efficient and energetic committee could get together they could perfect our organization so that the continued question of what the rule is on this, or what the duty of that committee is, could be answered. I hope that may be done. I am going to make a motion, if you will allow me, that the committee on colleges be requested to go ahead and make their report, as they are abundantly competent to do according to their ideas of what is right and proper, under such modification of these rules as they deem necessary.

Dr. Noble: That's exactly the point—we are going to have you go over in conference and see what modifications we desire. We have given you the guide, now do you go and do the work and that will end it.

Dr. Donnally: We have gotten a good deal of information and obtained the feeling of the meeting, and we understand what this organization will be satisfied with and it is very important information for the committee. I think everyone has been benefited by it and will be better able to perform his duties, but the motion is that the committee on colleges make this report without regard to the rules passed last year, or under such modification of those rules as it may deem necessary and proper; let them go ahead and finish their report.

Dr. Chappell: I don't understand that the motion was seconded. We used to have what we called a constitution and by-laws in this association.

Dr. Meeker: We have it yet.

Dr. Chappell: That means the organization with us—when we subscribed our money, etc., and incorporated it under the statute and adopted our constitution and by-laws—then we were organized and that has already been done, and we have now nothing to do except to go ahead with the work.

Dr. Donnally: Then what are the duties of the committee on colleges? Dr. Faught has been worrying over them for a year.

Dr. Faught: Oh no, you misunderstand me entirely.

Dr. Donnally: You say in the paper you and Dr. Brown issued that you have not been able to find any rules limiting or defining the duties and powers of the committee on colleges.

Dr. Faught: Oh no We had them defined last year.

Dr. Moore: We are wasting a great deal of precious time; as I understand it, the contention is that we have not any rules, that there are no rules in regard to colleges We spent a whole session yesterday afternoon, went over that matter carefully and discussed it, and adopted our rules; they were adopted here yesterday afternoon and they are now the rules.

Dr. Edwards: Not adopted as a whole.

Dr. King: Then I move that we adopt them as a whole.

The above motion was seconded by several members.

Dr. Moore: We have got our constitution and a whole lot of rules that have been adopted from time to time. There is no necessity for any discussion about that. I thought yesterday we adopted these rules and they were to be the rules for the guidance of the committee to go to the Faculties' Association. I don't think we shall have any trouble at all. I think the Faculties' Association will take these rules. I had a talk with some of the men—the good men—when I say the good men I do not mean that they are not all good—but I mean men who have been working for higher education for years in the Faculties—and I told them what we had done yesterday and they seemed to be perfectly satisfied and thought we could work together without any difficulty.

The President: The motion now is, that the rules we discussed yesterday be adopted as a whole.

Dr. King: In support of my motion I wish to say this: The rules that we adopted singly are the rules governing this association; they are the rules that our committee is to go by. They are not rules to be submitted to the committee of the Association of Dental Faculties. They are merely the rules that our committee is to go by. If after consultation with the other committee it is agreed that they shall be further amended this association can so amend them.

Dr. Brown: I doubt very much whether we can so amend these rules, if they are once adopted as a whole.

Dr. Chappell: The rules must be submitted at one session and adopted at another.

The President: I do not want to cut off any debate that will throw any light on the subject, but there is a motion before the house.

Dr. Hatfield: From some of this discussion it might be supposed that this association was not competent to make rules governing this body. If we are to go to the other association and ask them what rules are agreeable to them, we are not making rules to govern this body, it seems to me. They will ask what our rules are; what are we going to tell them? I think we are competent to make rules to govern this body and I think we should adopt some rules so that when we go there and they ask what the rules are we can have something to submit to them.

Dr. Donnally: But these rules are to govern that body. The rules that this joint committee proposes to make are rules that will control them.

Dr. Faught: If I might have the privilege of saying a word, not to argue the question but to throw a little light on the subject from the standpoint of the committee on colleges, I think that we are perfectly competent to adopt

these rules. I think the gentleman who just spoke is perfectly right, if it is definitely and distinctly understood now before we do it, that whatever recommendations are brought back from the Association of Faculties we can amend the rules and readopt them as a whole before you ask your committee on colleges to report.

Dr. Noble: That is all right.

Dr. Moore: I do not see what that has to do with the report of the committee on colleges. Let the committee on colleges report what it has done and what is to be done in the future. I don't see that that has anything to do with this matter at all. I do not see why we cannot get that committee's report and act upon it. It has nothing to do with the future, but only with what is past.

Dr. Barrett: I should like to ask if there is any by-law governing this association as to the number of times a man should speak on any question.

The President: No sir.

Dr. Barrett: I think that is a rule that we are most in need of.

Dr. Donnally: I have risen to make an amendment to that. I move that the motion of Dr. King, of Baltimore, be changed so as to read that the committee on colleges take the rules as adopted yesterday seriatim, and the one additional adopted this morning, if you please, and finish their report of the year's work under those rules. Let them not consider future conditions. My amendment is that the committee on colleges take these rules for their guidance and conclude their report under the rules as modified.

Dr. King: I don't see how that can be made as an amendment to my motion.

Dr. Fredericks: I move the previous question.

The motion of Dr. Fredericks was seconded and carried. A vote was then taken on the motion to adopt the rules as a whole and the same was carried.

Dr. Moore: I move that the committee on colleges finish reading their report and let us get through with it.

Dr. Faught: The committee on colleges have reported everything they can report at this date.

Dr. Keefe: Have the conference committee anything to report?

Dr. Donnally: The committee on conference have simply to report satisfactory progress and ask for further time.

The President: I desire to make one suggestion, and that is I think the committee of the faculties are the individuals who should make the first advances.

At this point Dr. Barlow, of New Jersey, offered a resolution that the association hold its annual meeting at Washington, D. C., in May, 1898, and thereafter the annual sessions should be held at that place. The motion was seconded; and after considerable discussion a motion was made and adopted to lay the same upon the table.

On motion a recess was taken until 3 o'clock p. m.

AFTERNOON SESSION, JULY 31.

The President called the meeting to order and the secretary called the roll of states.

On motion the reading of the minutes of the previous session was dispensed with.

Dr. Fredericks: I offer the following resolution:

Be it resolved, That in all discussions a member shall have the privilege of addressing the meeting but once, and for not more than five minutes, and a second time when all have spoken who desire to, unless permission is given by the association.

The above resolution was seconded and carried.

Dr. Edwards: If there is nothing before the house and no business pending I should like to say that there is a college in my territory the certificate

of which we have refused to recognize. I understand that college has been accepted in the Association of Dental Faculties and I understand there is an application in for membership here.

The President: It should be referred to the committee on colleges.

Dr. Edwards: Then there is another college that I believe is not making any application that I want to speak of for the information of those who know nothing about it. It has so nearly adopted the name of another college that is reputable in its own state and city that the secretary of our association has been deceived and has actually registered a student from it. I at once set a trap for them and got a young man to write as a student who wanted to graduate, representing he had studied two full courses in one college and wanted to get to practicing as soon as possible and asking when they could graduate him. They dropped right into it and offered to graduate him in sixty days. He did not reply and some time after they again wrote him offering to graduate him at the end of thirty days, but saying he must come right away. It is a western college, there being two colleges located in the same state and city, and the names are so nearly similar that it is apt to deceive anyone. After we had inadvertently registered one they just poured in.

Dr. Brown: That is in our report.

Dr. Donnally: Two years ago at this place that question came up. the application was denied and the reasons set forth in a resolution that was adopted unanimously and special attention was called to the fact that the two names were very nearly similar.

Dr. Chappell: We have had two diplomas presented to us by the Kansas City College of Dental Surgery, of Kansas City, Kan. There is a Kansas City Dental College at Kansas City, Mo., also.

Dr. Lowry: There is no danger of their ever applying for recognition in the Association of Faculties; they know they would not have a ghost of a show—the one in Kansas; but those two colleges are very easily confounded. There is the Kansas City Dental College and the Kansas City College of Dentistry and the Kansas Dental College, leaving the word "City" off entirely.

Dr. Green: Dr. Patterson sent out a circular cautioning us and pointing out the difference between the two, and I think that went to all.

Dr. Chappell: I think all of the old secretaries understand it, the new ones may not.

Dr. Hatfield: I do not anticipate there will ever be a request from the Kansas City Dental College, of Kansas, for recognition. They have tried to have their diplomas registered in Kansas. We had one little fight with them this spring, but they gave it up, and the attorney-general of our state gave us his opinion that they were not eligible to be registered in our state. We are right on the border and they come over there, and this spring they tried to play a game on the board, but failed and since they have ceased to make any effort. That college is presided over by a gentleman by the name of Atkinson.

The President: Has that any connection with the one over the border?

Dr. Hatfield: I am unable to tell you that, but I think not. A man, I think by the name of Meakin, telephoned to me last winter asking if he was registered as a student and I told him he was not; he asked me if the attorney-general advised us to do so would we do it, and I told him we would take the matter under advisement, and in speaking with the attorney-general he told us we need have no fear; that he would sustain the board. Dr. Atkinson I believe had a charter a good many years ago and it became defunct and about two years ago it was revived again. We had some men from that school registered just prior to that law going into effect; of course we could not do anything with those men.

The President: The committee on colleges have this matter on hand; they understand the ins and outs of those colleges.

Dr. Donnally: If you will allow me I will read from the proceedings of this association, which I referred to a while ago, to show the necessity of state boards having the minutes of this organization for reference:

"It was resolved, that in the sense of this body the Kansas City College of Dental Surgery is not only unworthy of recognition, but we have conclusive evidence that it is a fraudulent concern, and further we would warn the public to be on their guard because of the similarity of title with a reputable school of the same city."

That is in the proceedings of this body in 1894.

Dr. Lowry: There will be but very little further trouble concerning the college presided over by Dr. Atkinson; we have sufficient evidence, we think, to cover that and deal with it fully.

Dr. Donnally: As there is nothing before this body just now I would like to call the attention of the organization to the fact that last year we recommended that a resolution regulating the incorporation of colleges be provided for in some way. In the District of Columbia we had two or three instances, one a very disreputable affair that would sell a diploma for a song; and notwithstanding a great deal has been said about the vested rights of an institution chartered indirectly under an act of congress, we went before congress and had that charter repealed, and there was a part of the bill that provided for the incorporation of medical and dental colleges in the District of Columbia, providing that they must make a satisfactory showing as to equipment and facilities as well as the personal fitness of the faculties to teach. That is in the hands of commissioners, who give an open hearing of all these cases so that anybody may make objections. We stand ready to make objection where there is any good ground for it; there is no objection to a good college. It seems to me something could be done in the different states in that way by fixing the standard and character of the college before it goes into existence. You cannot start a college in the City of Washington, if you have a million of money, until the commissioners have made a thorough investigation and are perfectly satisfied in the premises.

Dr. Moore: The committee on credentials reports that Dr. J. V. Heller, secretary of the Virginia board, is present and his credentials have been approved; also the credentials of Dr. Wright, from the South Carolina board.

Dr. Dowsley: I would like to say something concerning what we have been doing in New England. Possibly you may be all aware that the New England state boards have formed an association. I conceived that idea several months ago and we met in Boston last January. All of the states were represented excepting New Hampshire, and it was only through a mistake that they were not present. We spent a very pleasant evening together and discussed the different methods and ways in which we conducted our examinations. My idea was to see if we could not all get to a certain standard of examinations whereby the certificate from one board might be received by the others as evidence of qualification. Since that meeting one of the boards—Rhode Island—has had an amendment passed to the law and has come up to the standard we suggested. We in Massachusetts think we have a pretty good standard and Rhode Island is right in line and Connecticut we expect to follow very shortly, and the others will be heard from, I hope. I speak of this because I think perhaps it would be a good idea if that was carried out throughout the country, so that the middle states and the southern states should combine into an association, not with any idea, however, of withdrawing from this association, but of working amongst themselves. Our experience has been that men moving from one state to another circulate around New England more than they do in the south or west, and if a man who passes the Massachusetts board presents his certificate to the Connecticut or Rhode Island board it will be prima facia evidence of his qualification and his examination need not necessarily be a severe one. The great trouble now is that no matter how many boards a young man passes, if he goes into

another state he must go through the same ordeal. Of course in order to do that every board must come up to a certain standard and that standard should be a high one.

Dr. Hatfield: This is a national association and it seems to me something that would benefit the body is this: Washington, D. C., Pennsylvania and perhaps two other boards retain their delegates to the national association every year; they thereby become more familiar with the proceedings, do more official work and are of greater use to their constituents. It seems to me it would be the part of wisdom if we suggest to the members of the different state boards that so far as they can they return their delegates each year; it will enable them to become familiar with the methods and do more efficient work, for we do not know what has been done from one year to another. I merely make this suggestion so that it may be open for discussion.

Dr. Meeker: According to our constitution our brother, next year, whether elected a delegate or not, could come here and have the same number of votes as he has this year. We passed a resolution that a man who was once a member of the state board should have a seat thenceforth in this body and a voice in its discussions. If a man has gone out of his state board he can be with us just as Dr. Eaton of New Jersey is here now. So far he has not had anything to say, but he could if he wished to. As I understand our constitution and by-laws, if a man from a state board is elected a delegate and thereafter someone is elected in his place, but he continues a member of the state board, he can come here and have the privilege of voting because he is still a member of that state board which first sent him. But I realized myself two years ago that new men coming here are all at sea; they cannot tell what has previously been done, and so a few of us on our own responsibility asked the stenographer to come here. If we have in our printed proceedings a verbatim report of all that occurred, a man from any state can see what was done and is in a position to vote intelligently on any subject because he has read over the whole proceedings. I am glad that point was brought up.

Dr. Moore: The plan we have adopted in the Virginia State Board is this: At the annual meeting the secretary is instructed to furnish credentials to every member of the board who can and will attend the meeting of the national association.

Dr. Meeker: I do not believe it is the purpose of our constitution to bar out any member of a state board whether he is elected a delegate or not.

Dr. Moore: No; but to cover that we instructed the secretary to give credentials to every member of the board who could attend the meeting.

Dr. Donnally: I desire to correct Dr. Meeker. We have no such resolution on the book as he referred to, but as a matter of fact four years ago, seeing the necessity of continuing membership I offered the following resolution: "Resolved, that all persons who have once been delegates to this association may be associate members without the right to vote or hold office." That is about the language of it. I don't think it is printed as it was offered. As a matter of fact a number of the men who are members of the Association of Faculties to day are entitled to come and sit with us and advise with us, but not being delegates to the board they are not entitled to hold office or vote.

Dr. Parmele: Does not that apply and was it not intended to apply to those who retire from the state board? That is the understanding of the Connecticut board—that the whole board is entitled to appear here in full.

Dr. Brown: I understand that resolution was intended to cover those who were retiring from a state board.

Dr. Edwards: Yes, I remember that; it referred entirely to those who were no longer members of state boards and not to those who still remained such members.

Dr. Chappell: This is not a delegate convention, it is a National Association of the State Board of Examiners. The resolution that Drs. Donnally and Brown refer to was adopted to cover those whose membership had

expired in their own state board, so that they could retain their membership here and give us their counsel as honorary members.

Dr. Chappell: A gentleman spoke a few minutes ago concerning the state association of New England. In our state we have some cities where the dividing line between the states is in the middle of the main street; sometimes the office is on one side and sometimes on the other According to the rule of comity between states our attorney-general has suggested that we use every means possible to recognize registration providing no objection is made I think that when we have our laws amended we should incorporate the matters we are discussing so that if we should get arbitrary men on the board they would be controlled by the law. We all know that there is a written law and an unwritten law, like the common law of England and of some of our states; there is the written law of ethics and the unwritten law of ethics, so that we should be guided by what is right and what there is no objection raised to. We ought to have some uniformity in our laws and when they are amended try to get them within the lines of the spirit and advice of this national board. As to state boards deciding what colleges are reputable, when you make a record of your meetings it is wise to state there the reasons for which a college is rejected, so that if you should ever get into court about it you are in a position to explain the whole matter. Don't put too much on the record; it is better to say too little than to say too much.

Dr. Hatfield: I hope that this body will bear me out, because I want my constituents to understand my request and the meaning of it as to a member ber of the state board being a member of this body. My idea is that the oldest member should be sent as a delegate for the reason that in the appointing of a new board he might be left out. Dr. Callahan has been secretary of our state board ever since the board was formed and we retain him in office because he is familiar with all of the work. It would have its weight if this board should make a suggestion in the line I have spoken of, and some member might be retained on the board for that specific purpose so that one familiar with the work might be sent here. I tried to post myself and read everything I could get to read about it and went to see Dr. Davis, who had left our state, but I could not get very much information. Perhaps as we have a stenographer this year we shall be better informed.

Dr. T. B. Whitbey: I move that a committee of three be appointed to codify our constitution, by-laws, rules and regulations, have the same printed and report next year.

The above motion was seconded and carried and the chair appointed as such committee Drs. Meeker, Adams and Brown.

Dr. Meeker: I would prefer that the mover of the motion be made the chairman.

Dr. Whitbey: Oh, no: I quite understand the matter and take no exception. Dr. Meeker has been and is so familiar with this subject.

On motion a recess was taken until 8:30 p. m.

EVENING SESSION, JULY 31.

The President called the meeting to order and the secretary called the roll of states. On motion the reading of the minutes was dispensed with.

Dr. Meeker: Last year we had a very complete report from the state board of dental examiners. This year we have a very meager set of reports, which I now hold in my hand. I move that a committee of two be appointed to tabulate the reports and bring that tabulation into the association before the close of the meeting.

The above motion was seconded and carried and the chair appointed as such committee Drs. Dowsley and Parmele

Dr. McCurdy: I would like to ask the secretary if there is a report there from the Maryland State Board.

Dr. Meeker: No, sir, there is not.

Dr. McCurdy: I am sure the secretary was ordered to make a report.

Dr. Meeker: When the adjournment was made this afternoon I understood that the conference committees of both associations were to meet and I supposed they would be ready t› make some report at this time. The Faculties' Association held a session this afternoon and their members on the conference committee were engaged there, so the committees did not meet. At the meeting of the Faculties the subject of preliminary education came up and by a vote of seventeen to seven the Faculties decided to go back to the standard of 1884. The conference committee is in session now and may report perhaps in an hour.

Dr. Fredericks: I think that before we proceed to discuss this matter we should get their report, and I move we adjourn until Monday morning at 10 o'clock a. m.

The above motion was seconded and carried.

Adjourned until Monday, the 2d of August, 1897, at 10 o'clock a. m.

(To be continued.)

News Summary.

HEALTH OF CHICAGO.—For the week ending June 27, the *Evening Post* states, the mortality rate in Chicago was 10.99, said to be the lowest ever reported for any large city.

DIAMOND DRILLS, HOW TO USE.—In using a diamond drill for making cavities in artificial teeth, it is most important to bear in mind that the point should be dipped in sweet oil or water, *and placed on the work before the engine is started.* The engine should be stopped as often as the drill shows signs of becoming dry, and each time after it has been dipped in the lubricant it must again be placed on the work before the engine is started. It is, perhaps, needless to add that the handpiece must be held firmly and steadily in position to insure success and to avoid breaking the drill.—*Ash's Circular.*

WAS PAUL REVERE A DENTIST?—It has fallen to the lot of the New York *Tribune* to unearth the fact that the American hero, Paul Revere, was a dentist (*Western Drug Record*). If the evidence submitted be not a "fake" palmed off on that usually veracious journal, it establishes a fact not generally known.

Whereas, Many persons are so unfortunate as to lose their Fore-Teeth by Accident, and otherways, to their great Detriment, not only in Looks, but Speaking, both in Public and Private:—This is to inform all such, that they may have them re-placed with artificial Ones, that looks as well as the Natural, & answers the End of Speaking to all Intents, by PAUL REVERE, Goldsmith, near the Head of Dr. Clarke's Wharf, Boston.

This quaint advertisement, which appeared in the Boston *Gazette* of December 19, 1768, serves to show that Mr. Revere was a man various and versatile. It appears that his business was not solely to be a Revolutionary hero, to take exciting midnight rides and warn the Lexington minute-men, but that in his odd moments he carried on the more lucrative trades of goldsmith and dentist. His occupation as a handicraftsman in precious metals has long been known, but the landlord who said, "Listen, my children, and you shall hear," did not give the wide-eyed young people the interesting details in regard to Paul's dental work. In fact, his skill in this regard might never have been known had he not conceived the rare value of advertising.

FORMOL IN DENTAL SURGERY.—Didsbury announces in the *Journ. de Med. de Paris* of July 18, that it has been his experience that formol applied at once to the cavity, when the pulp of a tooth is removed, and hermetically enclosed, renders the extraction of the nerve unnecessary. Ten cases in twelve proved absolutely successful. The pain is severe for four or five minutes but then passes away. He also finds formol efficient in deodorizing carious cavities.

BALDNESS MICROBE.—One of the physicians at a hospital in Paris, it is stated, discovered a microbe of the skin which accounts for baldness. It appears that baldness attacks those whose skin exudes an excessive amount of fat or oil, and when the parts affected are washed with ether and other solutions, myriads of small microbes may be seen similar in length (!) to the tuberculosis bacillus. This particular skin microbe varies in size according to its age and position. For instance, on the scalp it is smaller than on the face or the body, but the structure remains always the same. The doctor has inoculated a sheep and a rabbit with the skin microbe at the Pasteur Institute, and he will make known the results of his experience to the Society of Dermatology. It is stated there are three or four therapeutic agents capable of destroying the fatty substance of the skin complained of.—*Am. Micros. Jour.*

Obituary.

DR. E. MAGITOT.

The Odontological Society of Chicago, recognizing the great services rendered by Magitot to the advancement of dental science, has adopted, and ordered sent to the family of the decedent, and to the dental journals of the United States and France, the following:

Magitot was born in Paris in 1833 and died there during the current year. His first contribution to dental literature was made in 1857 at the age of 24, relating to the structure and development of the human teeth, while the last came from his pen in 1897, just before he died. During these forty years Magitot wrote no less than sixty-five books, essays, pamphlets, etc., dealing exclusively with nearly every phase of dental embryology, histology, biology, pathology, hygiene, etc. No writer of any age has made so many, so varied, and so valuable contributions to dental science as Magitot.

The priceless services rendered by him entitle him to rank as one of the foremost investigators in odontology. He was a member of numerous scientific bodies and societies, whose members sincerely mourn his loss. It may be truly said, that when Magitot passed away from the scenes of human activity, dental science, not of France alone, but of the entire world, lost one of its noblest and greatest minds.

The dental profession of the United States, recognizing and appreciating Magitot's services, keenly mourns and sympathizes with his bereaved family and the profession of France, by reason of his demise.

A. W. HARLAN,
J. W. WASSALL,
LOUIS OTTOFY, } Committee.

Chicago, September 1, 1897.

We do not wish to weary you,

But we must repeat and emphasize what we have said before, however, that we can now furnish a **perfect amalgam,** which we call

"Fellowship" Alloy

We do not mean simply that it "will not shrink or expand," that it "has a beautiful white color," etc. We mean that at last we can offer the profession an amalgam which is perfect and satisfactory in all respects.

Each lot is properly treated and thoroughly tested before it is sent out, so that **"Fellowship" Alloy** will always be uniform.

Price, per ounce, $3.00

Dental Protective Supply Co.

1101-3 Champlain Building
Chicago

HYPODERMATIC TABLETS FOR

Local Anaesthesia,

DENTAL.

Formula of N. L. HOFF, D.D.S.

Our Hypodermatic Tablet No. 81, "Local Anæsthetic (Dental)," is made, as stated above, after the formula of Dr. Hoff, and we beg to quote from his paper upon the subject, published in the *Ohio Dental Journal*, as follows.

"The combination I am now using as a local obtundent yields good results. I use sterilized water to make the solution, and, to prevent possible decomposition, make daily or as needed for use. The formula I use is as follows:

℞ Cocaine.....gr. 1-2
Sulphate of Morphine.....gr. 1-8
Sulphate of Atropine.....gr. 1-200
Sterilized water.....gtts. xxx
Mix and inject hypoder. gtts. v to xv.

"For convenience I have had the Cocaine, Morphine and Atropine made into soluble tablets by Parke, Davis & Co., of Detroit, and in this way solutions of any strength desired may be quickly and accurately made with little or no inconvenience. As a solvent I use distilled water containing from 8 to 10 per cent. Euthymol to keep it sterile. If desired to make a 2-per-cent. solution all that is necessary is to dissolve one tablet in 25 minims of water; a 1-per-cent. solution can be made by dissolving one tablet in twice this quantity of water, or 50 minims. A 4-per-cent. solution can be made either by reducing the water one-half or adding another tablet to the 25 minims, etc."

IN TUBES OF 25, 45 CENTS PER TUBE; OR FOUR TUBES (100 TABLETS), $1.65; OR, IN BOTTLES OF 100 TABLETS, $1.55 PER BOTTLE; BUT THESE TABLETS PARTICULARLY, BEING MADE VERY FRIABLE IN ORDER TO BE QUICKLY SOLUBLE, ARE BEST KEPT IN TUBES OF 25.

Our ***Descriptive Price List of Pharmaceuticals of Especial Interest to Dentists*** will be promptly forwarded upon request. Just drop us a postal card.

Parke, Davis & Company,

Detroit, New York, Kansas City, Baltimore, New Orleans, U. S. A.
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